The RUBBER AGE

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Two Important Articles

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Late News of the Rubber Industry

High Rubber Consumption Rate Maintained During September

THE consumption of crude rubber in the United States during September did not quite equal the record breaking figure of August, but totaled 39,882 tons and exceeded the consumption of the corresponding month last year by 12,668 tons or 46.5 per cent. It would appear that the August record will stand as the peak for some time as it is reported that the rubber manufacturing industry is beginning to make the usual seasonal curtailment in production during the remaining months of the year. However, the high rate of consumption which has maintained for the nine months of the current year has brought the total to 331,864 tons as against 291,915 tons for the corresponding period of 1927.

Crude rubber arrivals during September were high, totaling 46,662 tons bringing the total imports for the nine months to 322,346 tons as against 331,383 tons during the same period last year.

In the face of the heavy consumption the stocks on hand at the end of September, in spite of the heavy arrivals, remained practically the same as they were at the end of August and totaled 68,851 tons. Stocks afloat to the United States were listed at 48,566 tons, making the total visible supplies on hand and afloat 117,417 tons. Detailed comparative figures covering monthly consumption, stocks on hand and afloat and imports will be found in the statistical section of each issue of THE RUBBER AGE.

New York Rubber Group, A. C. S., Holds Meeting

ALMOST 200 chemists and others interested in rubber technology attended the third meeting of the New York Group, Rubber Division, A. C. S., held at the Town Hall Club, New York City, on Wednesday, October 10. The speaker for the evening was Charles R. Boggs, factory manager of the Simplex Wire & Cable Co., who spoke on the "Manufacture, Technology and Testing of Rubber Covered Wires."

After an excellent dinner, which preceded the session, D. F. Cranor, secretary of the group, read the minutes of the April 26, 1928, meeting, which were approved. Dr. Gibbons, chairman of the New York Group, then appointed a nominating committee, consisting of Dr. Harry L. Fisher, Messrs. K. J. Soule, Stanley Krall, Carl Williams and J. P. Millwood, to submit a slate at the next meeting for the election of officers for the year 1929.

Mr. Boggs' paper, which is reviewed in detail on page 91 of this issue, proved of great interest and was well received. It disclosed the magnitude of the insulated wire industry and its many problems. Mr. Boggs reviewed the history of insulated wire from early in the nineteenth century to the present time, explained the various types of cables and methods of insulation, described the necessary tests and, in a general way, told of the manufacturing operations. A large number of samples of various types of wires and cables were shown to illustrate various points discussed by the speaker.

There was a discussion following the lecture, in the course of which questions were asked which served to amplify the principal points brought out regarding the various types of cables, the use of modern compounding ingredients, including selenium; and compounding methods employed to minimize the corona effect.

United States Rubber Partially Wipes Out Loss

EXCELLENT reports of sales since July 1 on the part of the United States Rubber Company have led financial circles to approximate the earnings of the company for the second half of the year to reach $6,000,000, partially outsetting the large deficit of the first half of $14,000,000. The net profit of the company for the third quarter of the current year was approximately $3,000,000 after deducting interest, taxes and depreciation. Sales in dollars for the same period were 5 per cent ahead of the corresponding quarter of the preceding year, indicating a much higher unit volume than last year in view of the fact that prices prevailing during the last three months have averaged 20 per cent lower than in the same quarter last year.

Although the profit from the crude rubber output of the plantation subsidiary of the company has been slight this year, production from the rubber estates has increased and will approximate 28,000,000 pounds in 1928. Accordingly, any increase in the crude rubber market will be appreciably felt.

Goodrich Earnings May Approximate $8,000,000

SELLING operations of the B. F. Goodrich Company since the beginning of the second half of the current year, would indicate that the company will earn a profit for the semi-annual period of approximately $8,000,000. It is figured that after deducting taxes and other fixed charges the net earnings will approximate $5.00 per

share on the common stock. The monthly earnings of the company during August were three times those of the previous month, and the combined earnings of July and August more than made up the deficit of the first half of the year of $1,500,000 with a margin of profit to spare. Goodrich has been the only major rubber company, whose stock is listed on the New York exchange, which has continued to pay dividends on the common stock and weathered severe crises in the industry with a strong financial position.

Tire Companies Plan Usual Seasonal Curtailments

AFTER establishing the highest production records in the history of the industry during August and September, the tire manufacturers in the Akron district are now reported to be easing down their schedules in line with the usual seasonal curtailment programs. It is reported that Goodyear, Goodrich, Firestone, United States Rubber, Miller and General combined, which have been producing around 157,000 tires per day will cut their schedules to a total of 137,000 tires per day, a curtailment of approximately 15 per cent.

Tire sales are reported to be holding up well, however, and original equipment tires for the automobile manufacturers are still about 20 per cent of the total production.

Firestone May Secure Large Brazilian Concession

REPORTS are persistent that the Firestone Tire & Rubber Company is seeking further plantation concessions, this time in Brazil. The rumors are given further color by the fact that newspapers in Para are conducting a vigorous campaign against further grants to foreigners and are mentioning specifically a proposed transfer of a 2,400,000 acre concession in the Amazon valley, held by Farias Coelho to the Firestone interests. The local press, however, has recently carried a denial of the report from Firestone officials.

Rubber Factories Hold Many Sales Conferences

AMONG the numerous sales conferences among the individual rubber manufacturers held in the Akron district during the last fortnight, the largest meeting of its kind to be called in the history of the industry was probably the sales conference of the Goodyear Tire & Rubber Company, October 15 to 18. Over 1,000 salesmen and plant executives from all over the United States and some from foreign posts made the sessions the occasion of the 30th anniversary of the company. Preceding the sales conference the annual inter-plant conference was held of production officials of the main and all subsidiary plants, including representatives from the British and Australian factories.

Nine special trains brought the salesmen to Akron. Activities started with a costume parade on October 15 and ended with a barbecue at Wingfoot Lake on October 18. The time between was spent in many sessions wherein plans and policies for the coming year were outlined and discussed.

The Seiberling Rubber Company held its annual sales conference the week previous to the Goodyear meeting. More than 250 salesmen and Seiberling distributors were in attendance.

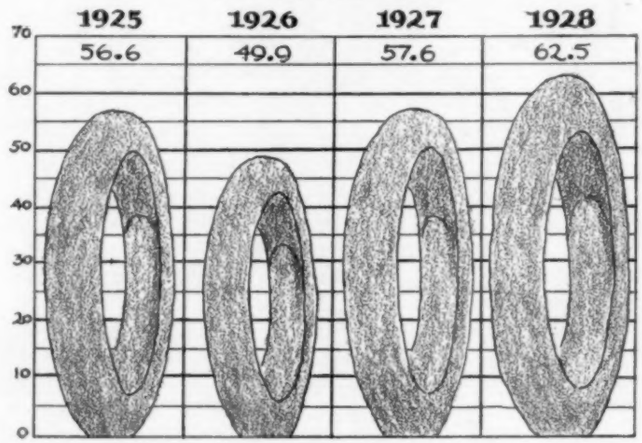
The fall sales conference of the General Tire and Rubber Company, at which 200 representatives of the company were present, was held during the first week of October and a conference of officials and branch managers of the India Tire & Rubber Company met the same week.

Tire Dealers' Survey Shows Increase in Average Inventories

THE preliminary statistics covering dealers' stocks of automobile tires in the United States as of October 1, have been issued by the Department of Commerce and reveal an increase in comparison with the average stocks held on the same date in previous years. According to the returns reported from 20,307 dealers, the average stock of automobile tires and truck casings per dealer was 62.5 as compared with 57.6 casings in stock on October 1, 1927. The accompanying chart shows the comparative figures for the last four years.

In past surveys, the figures given in the preliminary reports, have been slightly increased by the inclusion of later returns from the dealers.

Graphic Chart of Dealers' Tire Stocks on October 1, for Last Four Years



Dealers reporting stocks of balloon casings had an average of 42.7 per dealer, an increase of 12.0 tires per dealer or 39.1 per cent over last year. Balloon casings constituted 45.7 per cent of the total casings on October 1, 1928, as contrasted with 37.6 per cent on October 1, 1927. Inner tubes held by dealers average 102.7 tubes against 103.1 held last year.

In the preliminary classification of dealers according to the size of stocks carried it was found that there was an apparent decline in the number of dealers handling less than fifty casings. The accompanying chart shows the relative percentage of dealers in accordance with the volume their stocks carried.

28.65% HAVE 10 TO 25 CASINGS
22.71% HAVE 26 TO 50 CASINGS
18.68% HAVE LESS THAN 10 CASINGS
16.66% HAVE 51 TO 100 CASINGS
13.24% HAVE MORE THAN 100 CASINGS

The final report of the survey will be issued by the Department of Commerce the last week in October with the returns tabulated by states.

"Pilot"—La Crosse "Siak"—Hood "Dot"—La Crosse "Sandlot"—Hood "Golf Cleet"—Beacon Falls

The 1929 Canvas Footwear Line

Companies Are Stressing Quality, Attractiveness and Durability in the New Styles—Sport Shoes Are Being Particularly Featured and Many Distinctly New Constructions Have Been Designed

THE new line of canvas footwear which went out to the trade several months ago is meeting with an enthusiastic reception, and from the manufacturers' viewpoint represents the most orderly and sound piece of merchandising the industry has seen for some time. Instead of automatically slashing prices, in many cases the companies have raised the quality and designed more attractive and durable shoes at slightly higher prices. The staple numbers have in many instances been reduced in price, in others they are being quoted at the same prices as last year.

A more concerted effort has been made by all producers to feature shoes for outing and sports wear, and some distinctly new constructions have been designed to gain a stronger hold on this market which is growing every year.

The Beacon Falls Rubber Shoe Company announces its policy as follows: "It seems to be the consensus of opinion of different people who have given time and study to the subject, that the independent retailers who win out against cut price competition, are the ones who use good common sense in the selection of the merchandise that they carry. Therefore, it follows logically that their business is most likely to succeed by merchandising the distinctive numbers that give individuality to their stores. Our well-known policy of having each item in our line pass this test, and the fact that the Top Notch line, selling and advertising ties up closely with the merchant, makes this proposition a most attractive one for the independent retailer."

Cleated Soles in Sport Lines

The new line is featuring two groups of shoes styled "Grips" and "Cleeto." The former includes a full line of basketball and athletic shoes priced from $2.60 to $2.00, and the latter a quality medium priced line featuring the cleated sole construction. A new golf oxford, the "Golf Cleet," carries this sole and is priced at $1.30.

The Converse Rubber Shoe Company summarizes its new line as follows: "Grade for grade, shoe for shoe, we invite comparison with the best. You will find our shoes superior in quality and construction and, as is true of all Converse footwear, exclusive in design. A special effort has been made to create outstanding values in the medium priced field which our dealers can sell at a satisfactory profit, and we call your particular attention to the Buster, Tenax, and Slugger."

The Converse "All-Star," the live steam cured moulded sole basketball shoe carries several improvements, an orthopedic shank in the sole, a pivot button in the ball of the sole where the wear comes, new tongue construction with an absolutely smooth lining, and an eight-ply toe construction. The price remains at $2.90. In the medium priced class the Big Nine has been reduced to $1.35 and the Broncho to $1.90, and a new shoe with special appeal to the boy who plays sand-lot baseball is the Slugger with a boy in a diamond sole pattern and a distinctive ribbed reinforced toe foxing.

Color Featured in Many Lines

The Dominion Rubber Co., Ltd., of Canada, states that the vogue for color in sportswear has encouraged them to create several new models of shoes, and many are the attractive new patterns that they have devised to harmonize with gay clothes worn everywhere today. One of the many new departures is the "Cushion" shoe with a patented cushion sole running the full length of the shoe between the outsole and the insole, the patented cushion between sole absorbing all shocks and jars, this assuring unequalled comfort. Misses and children's specialties with Re-Ly-On soles carry fancy fabrics that are kin to some of the fancy gaiter cloths and they also carry adjustable snap fasteners.

Endicott-Johnson Corporation states that their sales on vulcanized canvas sport footwear known to the trade as Jiggers show a wonderful gain over last year. The shoes were introduced to the trade from a standpoint of quality. One of the most distinctive numbers is the Airplane which wholesales at $1.10 for boys. This shoe carries a canvas top with a printed design of tennis rackets, baseball gloves and other sport paraphernalia, with an aeroplane design on the sole, thus carrying a distinct appeal to the youngsters. Basketball shoes with leather tops are another feature of the line.

The Gutta Percha and Rubber Co., Ltd., of Toronto, Canada, is also following the style and color trend in the dominion, featuring sport shoes in a variety of materials and different trimmings to suit practically every individual taste. Many heel oxfords and pumps for women are shown

carrying the latest numbers of pattern printed and woven ducks.

The Hood Rubber Company, which has always been one of the leaders on lines of canvas footwear, is presenting a carefully worked out and attractively styled line of tennis shoes coupled with a merchandise and advertising campaign of dealer helps which should greatly broaden the canvas market. The Hoopster is a new basketball shoe with a suede leather upper, sponge cushion heel, ribbed toe guard, and buffed Smokecrepe outsole. Other basketball shoes are the Greyhound, Hyscore, and Whippet, all appropriately named according to their various features. The demand for athletic canvas shoes for women is met by the Gymshu and Co-Ed, whereas the Vantage, a heavy canvas oxford with a tough crepe sole will appeal to tennis players. In the medium priced field the Siak, which has been one of Hood's leaders for several years is again featured together with an attractive new shoe, the Sandlot, carrying a pattern duck upper. Such numbers as the Trackshu and Wurkshu, which should have a renewal of demand owing to high leather prices on work shoes, together with such staple shoes as the Clyde line round out the Hood assortment as one of the most complete lines of canvas footwear ever shown.

Models Carry Orthopedic Features

The Servus Rubber Company, Rock Island, Ill., which started as a canvas footwear mill only later broadening out into the rubber footwear field, has a very complete tennis line for 1929. With three basketball shoes as leaders, they are manufacturing fourteen other numbers of tennis footwear. The company states that if their orders so far are any indication as to what the 1929 season will be, they can say that more canvas rubber-soled footwear will be sold in 1929 than in any previous year. The Famous Basketball Shoe group includes the "Phog" Allen basketball shoe with an improved back cut, leather back stay, reinforced arch, and specially designed pure compounded gum soles. The Dr. Meanwell 1928 Collegiate model carries special orthopedic features, while the Ralph Jones Professional is offered in the molded sole type. In the medium and low priced class many other attractive numbers are carried.

The Phillips-Baker Rubber Company, Providence, R. I., is concentrating on the molded sole design as the general tendency has strongly favored this type of shoe as developed by that company. Among the numbers carrying the Goodyear Diamond Quality trademark are the K-O, carrying the black one-piece molded basketball sole at $1.30 and the Aviator at 95 cents, together with the Gridiron at 80 cents. In the Gem, which is the lowest priced shoe in the trimmed class, a rugged black bumper edge sole with tiretred design is carried. In the untrimmed shoes, this company is featuring oxfords of cut-out vamp design with tweed fabrics harmonizing with foxing and soles.

The United States Rubber Company, which is the largest producer of canvas footwear in this country, is featuring its new broadside to the dealers with an appeal to capture the school market with "Keds," the best known consumer line. Many of the old favorites, such as the "Spring-Step and Comet" basketball shoes, the Gladiator and Conquest in the medium-priced class, are shown, together with some new feature numbers. Among these are the "Big Leaguer," a medium-priced molded sole lace-to-toe bal of unusual value with Feltex insole; the Cleo, a colorful sport oxford with a fancy fabric upper in crimson, blue, jade, and sand color with trim and vulcanized crepe sole to match; the Hollywood, a new fancy oxford of combination stoller tan and sand mixed fabrics, and several other numbers in pumps. For a boys' low-priced shoe of good quality the Shortstop is offered, selling at 86 cents factory, with a rugged sole of molded design. For a high grade moulded sole Ked the "Royal Tread" is a rugged shoe selling at $2.15 for men's.

Novelty Ducks Popular in Uppers

LaCrosse Rubber Mills Company, LaCrosse, Wis., show three new numbers which have been added to their "Wisconsin brand" line, in brown and white novelty duck and ranging in prices from 60 cents for children's sizes on the "Dot" sandals, to $1.05 for the "Pilot."

Several of the other companies in Canada and the United States have not yet sent out their catalogues to the trade, but when they are available they will doubtless show features which are distinctive and of good value. The Cambridge Rubber Company, in both its tennis and footwear lines, stress individuality and new ideas. The Mishawaka Rubber and Woolen Mfg. Co., together with the B. F. Goodrich Company, both carry good staple canvas footwear numbers of quality.

Malayan Notes

The office of the Rubber Controller is being closed and a bare skeleton force has been maintained since July 30, according to U. S. Trade Commissioner Donald Renshaw, at Singapore. Present indications are that future statistics after November 1 covering monthly rubber exports from the restriction area by States will not be issued. He reports that it is estimated that 40 per cent of the estates in British Malaya can produce with some profit at present prices, that 40 per cent can just about break even, and that 20 per cent will be heavy losers.

Jiggers "Airplane" Endicott-Johnson | "Phog"—Allen Basketball | "Dot"—Gutta-Percha "Siren"—Dominion | "Slugger" Converse | "Keds"—U. S. Rubber

How Will *the* Sales *of* Airplane Tires Be Handled?

The Distribution of Airplane Tires for Replacements Presents New Marketing Problems—Policy Now Is Toward the Regular Tire Distributors Located At or Near Local Airports

BECAUSE of the constantly changing conditions in the field of aviation, there have been no definite lines of distribution mapped out by the various rubber companies in marketing airplane tires although a rather strong trend can be seen toward the regular tire dealer located at airports as the logical and most satisfactory outlet.

At the present time tire dealers all over the country are selling some airplane tires as local conditions warrant but airplane accessory dealers at the air ports, so-called jobbers of airplane supplies who maintain a force of travelling salesmen and also a number of airplane dealers are supplying a large proportion of airplane tires on replacements.

"No definite plans are as yet possible in this field," according to V. R. Jacobs, assistant manager of the aeronautical department of the Goodyear Tire and Rubber Company, "although the most logical method under present conditions strongly indicates the tire dealer as the probable outlet.

"Perhaps the greatest reason for this trend is discerned in the almost utter lack of service facilities, which is the present weakness of the entire field, for the proper care of airplane tires. Under the best conditions an airplane tire might be expected, barring injuries, to give service for two or three years but when one considers that practically no airports have air lines for the proper inflation of the tires and that these tires hardly ever receive the proper inspection accorded automobile tires, it is always a problem just exactly how much service may be expected. All of which reverts to the original opinion that the tire dealer, who is trained and equipped for proper tire service, is the logical distributor of the future for airplane tires.

"Airplane tire volume today is of course relatively small as the entire field is still in its infancy but our experience has shown that all of the Goodyear dealers who have gone after this business, have found the sales to be consistent and while not as yet in a volume to compare at all with their automobile tire trade, yet of sufficient value to be seriously considered in the future. Considered on the basis of proper service, the airplane tire business will not reach an appreciable volume until many more airplanes are put in service, although the present trend toward tail wheel tires in itself has increased the possible sales in this field enormously. In fact, the entire trend seems now to be toward tail wheel tires from the 10X3 and 14X3 to the larger tires such as the 18X3 and 20X4 necessary for the large commercial airplanes, in place of the skid formerly used.

"These tires are rapidly dropping away from the flat base type and are going into the straight side, drop center, non-skid type, the non-skid tread coming into vogue because of the breaking system that is now being used on a great number of planes. The field is somewhat divided on this one point, some considering that the non-skid tread might pick up debris which would injure the wings but in this matter we consider this possibility negligible and feel that the non-skid tread is a decided asset.

"It is interesting to note that aviation trade publications which list the mechanical details of an airplane in much the same fashion as the automotive publications list these details, do not show tires as part of the equipment and one may judge from this that although safety in landing and take-off are dependent upon the tires, so far no real concentrated effort has been made to afford proper service facilities with but a few exceptions. In the future it would seem that the tire dealer at the airport, being adequately equipped to render this service, would be the most logical means of sales distribution."

At the B. F. Goodrich Company, P. A. Aspell, assistant manager of manufacturing sales for airplanes, states that this company distribute their airplane tires through their regular established dealers, excepting, of course, their original equipment business which in the case of all tire manufacturers is handled directly from the factory.

The General Tire and Rubber Company reports that some business is being done in this field although the company do not make a strictly airplane tire but it has been found that the Buick size General auto tire works out very satisfactorily especially since the airplanes are being equipped with brakes. This company does not handle any

The two most common types of distributing agencies are shown in these views taken at Curtiss Field, Long Island. On the left is the hangar of a jobber of airplane parts and on the right a regular agency and service station for automobile truck tires, each establishment carrying a stock of a few dozen airplane casings.

original equipment business and whatever sales are made in the airplane tire field are handled directly through their established dealer organization. That the company is doing some business in this field is well evidenced in the sale by the A. H. Rude Company of Los Angeles of a considerable number of tires for Navy airplanes.

The opinions of these executives are borne out by conditions prevailing at the majority of the major aviation fields. No concentrated effort on tire distribution is apparent, and rubber manufacturers have as yet made little or no attempt to advance the sales of their particular brands by advertising or other means.

At Curtiss Field on Long Island, New York, for example, two dealers in aviation supplies and one regular tire dealer carry practically all the airplane tires to be found on the entire airport. The Aviation Associates, Inc., who maintain a large hangar for making airplane repairs and distributing various parts, keep about two dozen tires of different sizes in stock.

"We very seldom have calls for tires," a representative of this company stated, "as replacements seem to be extremely infrequent. The few tires we do carry are of the most popular sizes, and we have never handled any of the larger tires at all. We make repairs on tubes, but don't do any vulcanizing."

The Air Transportation Equipment Corporation, another organization of the same type, also carries a few tires in stock, having but few requests for replacements. A Goodrich truck tire repair and sales agency at the field handles whatever Goodrich airplane casings are distributed there, but seldom has more than 20 airplane tires in stock at one time. Representatives of this firm stated that they sold only a few dozen airplane tires during the course of a year.

The logical conclusion would seem to be that future airplane tire sales might best be handled by present automobile tire establishments located near the flying fields. They are already equipped with the expensive machinery necessary for service and repairs which are essential to an efficient selling organization. However, the industry is still in such an early stage that new conditions arising may easily bring entirely new methods and practices in future distribution.

Rubber Binders for Foundry Cores

BY use of the rubber, balata, or "thermoprene" type of core binders it is possible to make, without any baking, cores of strengths varying from perhaps double that of the ordinary green sand core to that comparable to the strength met in baked oil sand cores, according to information contained in letter circular No. 252, distributed by the Bureau of Standards, Washington, D. C.

The strength is very materially affected by the grain size (sieve analysis) of the core sand and it is not yet possible to state, without trial, whether a given core sand will be suitable for making high-strength cores with the rubber binders. By experiment and selection of the right sand and the right proportion of binder cores suitable for almost any sort of casting of any ordinary foundry alloy can be produced which will come away from the castings without the necessity of chipping-out.

The new binders consist of rubber, of balata or of a special commercial type of rubber cement, each dissolved in a suitable solvent such as gasoline for plain rubber and benzol for balata and the special cement.

In order to distribute the rubber over the sand grains it must be dissolved in a solvent. There are possibilities in the use of latex, but so far this has not been found as satisfactory as dissolved rubber.

Vulcanized rubber is not soluble. The rubber used must be raw, unvulcanized rubber, such as milled smoked sheet. The rubber should go into solution in gasoline, forming a cement much like that used for tire repairs. Commercial rubber cement may or may not be suitable. Makers of rubber cement who understand the use to which the material is to be put should have little difficulty in preparing a suitable binder.

The discovery of the useful properties of rubber and similar materials as core binders is due to C. M. Saeger, Jr. Experimental work was also carried out under his direction largely by C. H. Kerwin and L. D. Jones, all of the Bureau of Standards.

Synthetic Acetic Acid

The Niacet Chemicals Corporation, Niagara Falls, N. Y., has recently announced completion of plant facilities for the production of synthetic glacial acetic acid, by a process consisting of the direct addition of oxygen to pure acetaldehyde.

Two grades of exceptionally pure acetic acid are being made, namely glacial, with an acidity of 99% to 99.6%, and superior glacial, with an acidity of 99.7% to 99.9%. Both grades are absolutely colorless, free from metallic impurities and containing less than .001% residue.

Shipments are made in returnable aluminum drums and tank cars, which can be easily heated in cold weather to melt the solidified acid. The 110-gallon aluminum drums have a capacity of 900 pounds. A package consisting of a crate with two 5-gallon aluminum containers is also available, each container having a capacity of 50 pounds. These containers avoid breakage, handling losses and absorption of water by high strength acid, as is often the case with glass carboys and wooden barrels. The aluminum tank cars provided with a steam coil have not as yet been approved by the Interstate Commerce Commission and the American Railway Association.

10 YEARS AGO

Items Reprinted from October 25, 1918, Issue of THE RUBBER AGE

THE Rubber Association has established a bureau for the exchange of information relating to materials or machinery which members wish to buy or sell . . . Rubber Section of the War Industries Board has moved from Washington, D. C., to New York City . . . The announcement that the plant of A. W. Faber, Newark, N. J., had been sold has been denied . . . George E. Hall was elected president of Boston Woven Hose & Rubber Company . . . New high marks for the year were made for nearly every rubber company stock in active trading . . . Goodyear Rubber Insulating Company is to erect a $10,000 addition to its New York City plant . . . The first week of the Spanish influenza epidemic at Akron caused 25 deaths out of 839 cases . . . Davol Rubber Company is increasing gas mask production to 2,000 daily . . . V. P. Wachter has left the Johns-Manville rubber department to become superintendent of the Perfection Tire & Rubber Company, Wabash, Ind. . . . Manhattan Rubber Manufacturing Company is building a $20,000 addition to its Passaic, N. J., plant . . . Rubber industry in Greater New York has oversubscribed its Fourth Liberty Loan quota . . . The government has given out its specifications for pneumatic tires and inner tubes . . . P. W. Litchfield, vice-president of the Goodyear Tire & Rubber Company, gives 50 Akron boy scouts a 2,100-mile motor "hike" . . . The Autotyre Company is to construct a $35,000 factory at Oakville, Conn. . . . Kelly-Springfield Tire Company held its annual convention of representatives at Atlantic City, N. J. . . . The G. & J. Tire Company, Indianapolis, Ind., subsidiary of the United States Rubber Company, has awarded a contract for a $50,000 warehouse . . . William S. Wolfe, assistant chief experimental engineer of the Goodyear Tire & Rubber Company, has joined the government Motor Transport Corps.

New Applications *for* Aqueous Dispersions *of* Rubber

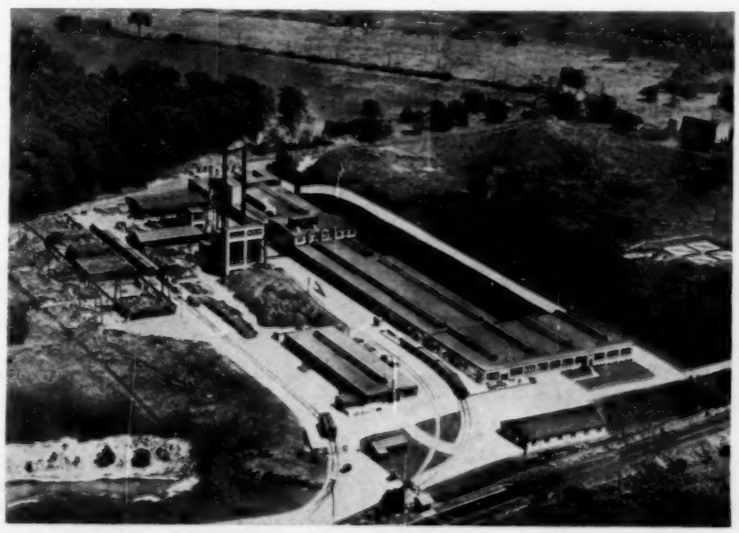
Many Interesting Uses for Dispersed Rubber Have Been Developed by the Dispersions Process, Inc., Oaks, Pa.—Has Been Found Adaptable in the Manufacture of Auto Top Cloth and Other Fields

SINCE the publication of the April 25th issue of THE RUBBER AGE, in which aqueous dispersions of rubber and their uses were discussed, there have been many additional uses for this product opened up, some of which were in the process of development at that time, and some of which are still in the development stage.

The E. I. Du Pont de Nemours Company and the Duratex Corporation, of Newark, N. J., have commenced commercial operations in the manufacture of double texture automobile top cloth, under a license from Dispersions Process, Inc. In these cases, a water dispersion of a compounded reclaimed rubber has been substituted for a solvent cement from a crude rubber base and the material is used as a combining cement between the two plies of fabric which make up the top cloth material. The fire hazard attendant upon the use of solvents has been eliminated and increased quality in the finished product has been secured, with a substantial reduction in material cost. Through the elimination of crude rubber in the compound and the substitution therefor of reclaimed rubber, the possibility of wide fluctuation in the cost of raw materials has been removed, together with the necessity for carrying large inventories of an expensive commodity.

The Johns-Manville Corporation has taken a license under the patents of Dispersions Process, Inc., and are working on a development program which covers the broad spread application of aqueous dispersions of rubber to asbestos products.

Several paper mills are using these dispersions in the commercial production of rubberized papers for various purposes. In some cases, this use is for the purpose of producing an extremely tough, pliable sheet which can be coated and embossed to make an artificial leather. In others, it is for the purpose of making wrapping papers of various kinds, which are waterproof and have greater strength and folding qualities. In this field, too, the use of reclaimed rubbers, which has heretofore been impossible, is now an established fact. The additional quality gained in the finished paper, at a slight increase in material cost, makes possible the substitution of paper for other more expensive products. Aqueous dispersions of rubber may either be added to the furnish in the paper beater, which involves no change in the standard practice of paper making, or they may be used to impregnate the finished sheet.



The Plant of the Philadelphia Rubber Works, at Oaks, Pa., Where the Laboratories of Dispersions Process, Inc., Are Located and Where All Experimental Work is Being Carried On

To go into details concerning the many other uses to which these dispersions are being put would take too much space, but some of the more interesting applications are as a combining cement for shoe fabrics and various other double texture materials, where the use of dispersions makes possible the elimination of dangerous solvents and the use of reclaimed rubber in the place of crude, thereby decreasing the material cost. As a material for cementing fabric to metal, the use of dispersions eliminates solvents and permits of better adhesion.

In the manufacture of dipped goods they make it possible to build up the required thickness of rubber film with fewer coats, lessening the manufacturing, as well as the material cost. As an impregnating bath for twine and cords they provide a simple means of accomplishing the desired results at a minimum cost. In the field of abrasive wheels they serve as an excellent binder for the abrasive material and greatly prolong the life of the wheel. As a spread coat for single texture fabrics, such as rain coats, aprons and sheeting, they permit, in many cases, of a reduction in material cost by the use of reclaimed rubbers, give better anchorage to the fabric, eliminate the use of solvents and cut down the number of spread coats necessary, thereby effecting a reduction in cost of manufacture. As a spread coat for fabrics designed for adhesive tapes, this material insures greater adhesion and more permanency of adhesion, with a reduction in material cost.

In the field of friction compounds for belting, hose, etc., the use of aqueous dispersions of rubber permits of application on lighter and less expensive machinery and greatly increases the anchorage of rubber to fabric, thereby insuring the availability of the full strength of the rubber before separation of plies. Where master batches containing high percentages of materials, such as Carbon Black, are desired, the process of dispersing rubber and pigment together insures a more thorough mixture and a higher pigment content than is possible through mill mixing.

Another interesting use for dispersions, and one which promises widespread application, is the anode process of electro-deposition of rubber. Since, in the anode process, the use of rubber in an aqueous dispersion is imperative,

and since there is no other method of obtaining reclaimed rubbers in that condition, the two processes must, of necessity, be developed concurrently.

These few uses for this new product give an indication as to the great possibilities before it. Many other lines of application are being developed in the laboratories of Dispersions Process, Inc., at the present time, and in addition to making it possible to use rubber in many fields which have not been available to it before, it is hoped and expected that it will be possible, ultimately, to substitute aqueous dispersions of rubber wherever rubber is now being used.

Rubber Tires and Inner Tube Census

THE Department of Commerce has announced that, according to data collected at the biennial census of manufactures taken in 1928, the total production of rubber tires and inner tubes in 1927 was valued at $779,252,254, a decrease of 5.5 per cent as compared with $824,548,604 reported for 1925, the last preceding census year. The 1927 total includes $1,583,583 representing the value of rubber tires and tubes made as scondary products by establishments engaged primarily in the manufacture of other rubber goods.

Of the 109 establishments reporting for 1927, 38 were located in Ohio, 10 in New Jersey, 10 in Pennsylvania, 7 in Indiana, 5 in Iowa, 4 each in California, Connecticut, Michigan, and Wisconsin.

In 1925 the industry was represented by 126 establishments, the decrease to 109 in 1927 being the net result of a loss of 28 establishments and a gain of 11. Of the 28 establishments lost to the industry, 6 were idle throughout the year, 16 went out of business prior to 1927, and 6 reported commodities other than tires and tubes as principal products and were therefore transferred to the appropriate industries.

The statistics for 1927 and 1925 are presented in the following tables. The figures for 1927 are preliminary and subject to such correction as may be found necessary after further examination of the returns.

Table 1—Summary for the Industry: 1927 and 1925

	1927	1925	Per cent of increase (+) or decrease (—)
Number of establishments	109	126	—13.5
Wage earners (average number)[1]	78,256	81,640	— 4.1
Wages[2]	$120,063,854	$120,614,081	— 0.5
Cost of materials, factory supplies, fuel, and purchased power, total[2]	$499,220,642	$559,940,978	—10.8
Materials and supplies	$488,167,931	(3)	.....
Fuel and power	$11,052,711	(3)	.....
Products, total value[2]	$869,688,063	$925,001,520	— 6.0
Tires and inner tubes	$777,668,671	$822,138,213	— 5.4
Other products	$92,019,392	$102,863,307	—10.5
Value added by manufacture[4]	$370,467,421	$365,060,542	+ 1.5
Horsepower	592,025	403,227	+46.8

[1] Not including salaried employes.
[2] The amount of manufacturers' profits can not be calculated from the census figures, for the reason that no data are collected in regard to a number of items of expense, such as interest on investment, rent, depreciation, taxes, insurance, and advertising.
[3] Not reported separately.
[4] Value of products less cost of materials, factory supplies, fuel, and purchased power.

The establishments engaged primarily in the manufacture of rubber tires and inner tubes in 1927 reported the consumption of 316,295 long tons of crude rubber and 105,754 long tones of reclaimed rubber. The crude rubber used in the production of tires and tubes only, including 414 tons used for this purpose by establishments classified in other industries, totaled 300,393 tons. The consumption of crude rubber in the manufacture of secondary rubber products by establishments engaged primarily in the production of tires and tubes amounted to 16,316 tons. No comparable statistics for 1925 are available.

A report to be issued in the near future will give statistics on the total consumption and the total stocks of crude and reclaimed rubber in all industries. Table 2 shows the consumption of crude rubber in the production of rubber tires and inner tubes in 1927, and Table 3 presents statistics on the consumption and stocks of crude and reclaimed rubber in the production of all commodities manufactured by establishments engaged primarily in the manufacture of rubber tires and tubes for 1927 and 1925.

Table 2—Crude Rubber (Exclusive of Gums) Consumed in the Production of Rubber Tires and Inner Tubes, 1927

Aggregate (tons, 2240 pounds)	[1]300,393
Pneumatic, total	284,691
Motor-vehicle, except motorcycle:	
Casings	232,270
Inner tubes	51,245
Motorcycle, bicycle, and all other casings and tubes	1,176
Solid and cushion	15,702

[1] Includes 414 tons consumed in the production of rubber tires and inner tubes manufactured as secondary products by establishments classified in other rubber industries. See Footnote 1, Table 3.

Table 3—Consumption and Stocks of Crude and Reclaimed Rubber Reported by Establishments Classified in the Rubber Tires and Inner Tubes Industry: 1927 and 1925

Kind	1927 (Tons of 2240 lbs.)	1925 (Tons of 2240 lbs.)	Per cent of increase or decrease (—)
Crude rubber (exclusive of gums):			
Total—			
Consumption	[1]316,295	335,873	—5.8
On hand December 31	29,887	29,666	0.7
Afloat December 31	10,299	(2)	.....
Reclaimed rubber:			
Consumption	105,754	(2)	.....
On hand December 31	9,345	(2)	.....

[1] This total differs from that given at the top of Table 2 (300,393 tons) because of the fact that that total represents the consumption of crude rubber in all the rubber industries in the manufacture of tires and tubes only, while the total in Table 3 represents the consumption of crude rubber by the establishments classified in the tire and tube industry, in the manufacture of both tires and tubes and secondary products.
[2] Not available.

Rubber Boot and Shoe Census

THE Department of Commerce has announced that, according to data collected at the biennial census of manufactures taken in 1928, the establishments engaged primarily in the manufacture of rubber boots and shoes in 1927 reported a total output for the year valued at $124,607,801, of which amount $115,785,941 was contributed by rubber boots and shoes and $8,821,860 by miscellaneous products. The value of products for 1927 represents an increase of 7.5 per cent as compared with $115,934,554 for 1925, the last preceding census year.

Of the 22 establishments reporting for 1927, 10 were located in Massachusetts, 4 in Connecticut, 3 in Rhode Island, and 1 each in Illinois, Indiana, New Jersey, Pennsylvania, and Wisconsin. In 1925 the industry was represented by 23 establishments, the decrease to 22 in 1927 being due to the fact that 1 establishment was reported as idle during the entire year.

The establishments engaged primarily in the manufacture of rubber boots and shoes in 1927 reported the consumption of 16,424 long tons of crude rubber. In addition, 1,938 tons of crude rubber (exclusive of gums) was consumed in the manufacture of rubber boots and shoes as secondary products by establishments engaged primarily in the production of other commodities, making a total consumption for boots and shoes of 17,159 tons. The establishments engaged primarily in the manufacture of rubber boots and shoes consumed 11,367 tons of reclaimed rubber. No comparable statics for 1925 are available.

The Williams Plasticity Press

Device Provides a Method of Studying the Consistency of Rubber Stocks— The Machine Was First Given Publicity Through Papers Read by Ira Williams Before the A. C. S. in 1924

A NEW type of plasticity press, designed to assist in producing rubber stocks which will process in a uniform manner, is the latest development of the rubber service department of the Grasselli Chemical Company, Cleveland, Ohio. It provides a method of studying the consistency of crude rubber, the "breaking down" of the rubber during milling, the effects of softeners and accelerators and the tendency of stocks to precure. This uniformity of material and milling can then be followed by uniform workability of the stocks on the calenders and tubes.

The machine which will be known as the Williams Plasticity Press, was first given publicity through papers read by Ira Williams before the American Chemical Society in 1924. The Grasselli company has had such a demand for the machine as now evolved and as shown in the accompanying photograph that they have decided to market them as a regular item of their equipment line.

The machine has two parallel plates lying in a horizontal plane. The top plate is raised and lowered, always parallel to the bottom plate, and the distance between the two plates is measured by a dial gauge attached to the upper plate. The weight of the upper plate, together with all moving parts, is 5,000 grams.

The testing sample should be two cubic centimeters in volume and approximately spherical in shape. This volume is obtained by taking the number of grams equal to twice the specific gravity of the stock. The press and test piece should be kept at constant temperature. This temperature depends on the type of stock and its purpose. It is generally between 70° and 100°C.

The sample is placed between two sheets of paper to keep it from adhering to the plates. The rubber will adhere to the paper. The gauge can be conveniently set to zero with the two thicknesses of paper between the plates. This provides the correction for the thickness of the paper.

The sample is then placed in the center of the plates and the "thickness-time" curve is obtained. The following is complete illustrative data:

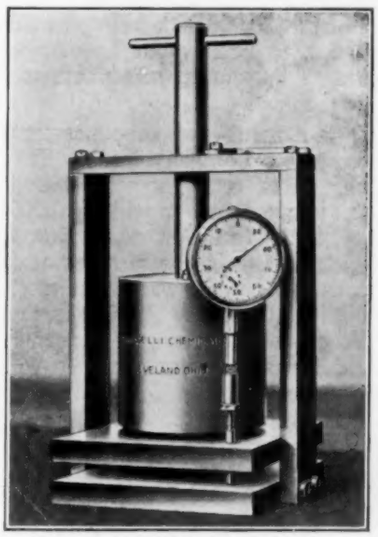
Minutes	Thickness in C. M. .....
0	
3	.211
5	.188
10	.163
15	.150
20	.143
30	.133

When these figures are plotted, a curve will be obtained, the general equation of which is $K = YX^n$. Where Y is thickness in millimeters, X is time in minutes and n is approximately 0.196. The value of K calculated from the data taken at any time should be uniform. An increase in the value of K as the time increases indicates that the rubber is becoming more firm during the test.

For routine control testing it is not necessary to obtain the complete curve. The usual procedure is to run the test for either three or five minutes and use the thickness of the sample at the end of this time as the measure of relative plasticity. When only three minutes is used care must be exercised to adhere strictly to standard conditions and to use a sample which approximates a sphere.

If the thickness of the sample is measured after it is removed from the press and cooled it generally will be found to have increased in thickness. This increase is measured after the stock has cooled for three minutes and indicates the amount of "nerve" in the rubber. In most cases small recovery is desirable, since recovery is generally thought to be connected not only with the original "workability" but with the ability of the stock to "hold gauge."

The breaking down of rubber depends upon the rate at which the work is done on the rubber above a certain minimum. When batch size, mill speed, speed ration, roll setting, etc., are uniform the breakdown depends upon power consumption above a certain minimum. Rubber gives most resistance to motion when cold. For this reason power consumption and breakdown are most rapid when the rubber is kept cold. Therefore, the first few minutes of milling cause the most break down.



Williams Plasticity Press

As milling proceeds the temperature increases and the resistance offered by the rubber is less and the energy consumed becomes less. Increased softness, due to temperature increase and plasticizing action of the mill, finally reduces the rubber to such condition that power consumption has reached the minimum which permits the rubber to flow on the mill without further break down.

Accordingly, under factory conditions 12 minutes milling, followed by a cooling period during which the rubber is removed from the mill, and again followed by a 10 minute milling period will produce rubber much softer than that produced by a straight period of 22 minutes milling.

Factors which tend to cause high energy consumption and produce the softest rubber are:

Milling as cold as possible.

Energy consumed per pound of rubber is greater for a small batch than for a large one.

Rubber which lies in a large "bank" can be neither cooled nor broken down.

Adding softeners toward the end of the milling period. This also applies to accelerators which soften, such as the guanidines and most aldehyde amine products.

If very soft rubber is required coordinated periods of double massing are more effective and save time.

The distance between the rolls can be greater for mills having high ratio between the surface speeds of the rolls.

This Plasticity Press is protected against corrosive action by an electro–deposit of pure cadmium from the Cadalyte process developed and sold by The Grasselli Chemical Company.

Akron Rubber Companies Spend $20,000,000 for Expansion

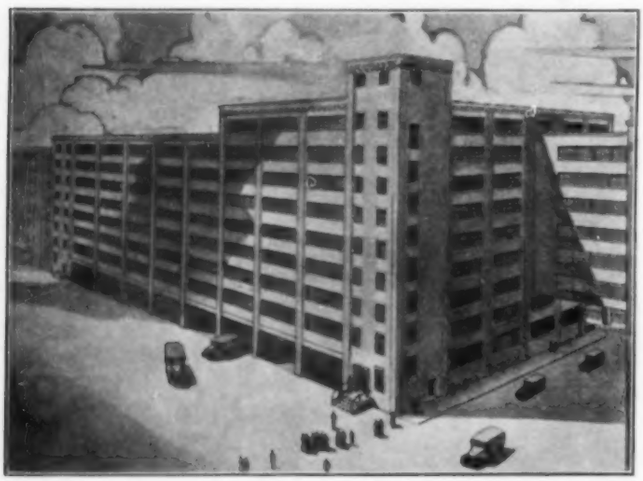
Extensive Building Programs Are Planned by All of the Leading Tire and Rubber Goods Manufacturers in Order to Meet the Increased Demand That Is Taxing Their Present Capacities

RECENT reports of building programs of several Akron rubber companies indicate that the district is about to experience a building boom to the extent of almost $20,000,000. Despite enlargements of branch factories, particularly in Los Angeles, the Akron companies are finding more manufacturing and warehouse space a necessity.

Following the announcement that the Goodyear Tire & Rubber Company would offer additional shares of common stock to its present shareholders, it was stated that this move would provide $10,000,000 for the expansion of the firm's facilities. As a first step in its program, it was declared that a contract has already been awarded for the construction of a warehouse to cost $1,250,000. The building is to be 600 by 200 feet in size and five stories in height. Work on the erection of the structure will start immediately. Additional housing facilities will also be required by the Goodyear-Zepplin Corporation if it decides to build the new Navy dirigibles at Akron.

Similarly, the General Tire & Rubber Company has announced details of a program involving the investment of well over $1,000,000 in new buildings and equipment, and the B. F. Goodrich Company has already begun work on a new $1,500,000 warehouse. The Seiberling Rubber Company, according to F. A. Seiberling, president, will double its capacity in 1929 which will mean the construction of new buildings.

Unofficially it is said that practically all the other rubber



The New Nine-Story Goodrich Warehouse Now Being Constructed at a Cost of $1,500,000

factories in the Akron district, including Miller, Firestone, India and Mohawk are planning to expand to meet increased demands for their products. Some have already added units. In addition to these, many of the smaller companies that manufacture rubber novelties and mechanical goods are expanding in a less conspicuous, but definite way.

According to William O'Neil, president of the General Tire & Rubber Company, that firm's building program is the largest ever planned in its 14 years of existence. It marks the fourth major addition to be made to the General plant in five years.

There will be one four-story building which will be 300 feet long and one three-story building somewhat shorter. There will also be a fourth story added to one of the present manufacturing units, and there will be a chemical ware-

This Four-Story Building Is Just One of the New Units Being Erected as Part of the Expansion Program of the General Tire & Rubber Company

house, a rim warehouse, an oil storage building and a new factory garage.

Office space will be increased 100 per cent as a result of this expansion, and a new printing shop, to be used in preparing a large amount of dealer advertising, is also included in the program, the entire plan increasing General's floor space by 200,000 square feet. When these additions are completed, the daily tire output of the company will be increased 50 per cent.

"Our present outlook," says Mr. O'Neil, "perhaps justifies a doubling rather than a 50 per cent increase in our plant. The building activities of our company, however, have always been governed by our capacity to build new factories out of earnings rather than with the aid of additional capital.

"In line with this policy, our new construction program will be financed by the General company from its own building fund. The building operations will involve no stock issues or other outside financing."

A few weeks ago the B. F. Goodrich Company awarded a contract for the construction of a nine-story warehouse at Akron to cost $1,500,000. This was reported at the time to be only the first step in an expansion plan involving an expenditure of between $4,000,000 and $5,000,000.

The warehouse itself, to be of steel and concrete faced with brick, will be 260 by 148 feet with a floor space of 316,000 square feet and a storage capacity of 4,500,000 cubic feet. Connections with other Goodrich buildings will be by means of underground tunnels and a system of bridges. The building will be the fourth largest manufacturing structure under one roof in Ohio.

Eight warehouse floors, a ninth floor for a modern dispensary, electric elevators, ground floor space for 16 large trucks, and railway track facilities will be some of the features of the new building.

The New York Rubber Exchange *Finishes Its* Third Year

Transactions Total 188,400 Contracts Involving 471,000 Tons of Crude Rubber Valued at $295,000,000

The Rubber Exchange Building at 31 South William Street, New York City

THE third annual report of the Rubber Exchange of New York, Inc., which was read at the annual meeting of the members of the Exchange on October 9, by Francis R. Henderson, president, disclosed that crude rubber to the value of $295,000,000 was traded in on the Exchange during the fiscal year ended August 31 last and represented 188,400 contracts equivalent to 4,710,000 long tons. The report showed a large increase both in the value and number of transactions handled as compared with the preceding fiscal year when only 72,000 contracts representing $150,000,000 changed hands.

President Henderson in his report this year pointed out that the year had been a difficult one for the rubber industry and that the uncertainty of the market, accentuated by the change in British governmental policy of restriction and the subsequent drop in crude rubber prices, had in turn affected operations on the Exchange. He said that manufacturers had been compelled to take heavy losses during the first half of the current year but that the outlook for the future was decidedly brighter.

Membership of the Exchange

The membership of the Exchange at the end of its fiscal year remained at its limit of 255 members, distributed geographically as follows: United States 208, England 30, France 11, Holland 4, Germany 1 and Ceylon 1. Forty-nine memberships were transferred at prices ranging from $4,425.00 to $13,000.00. The latter price was paid in April and is the highest price on record for an Exchange seat.

In spite of the large number of contracts traded in during the year only 26 disputes required settlement by the quality committee and no cases were submitted for arbitration.

Among the changes in the rules and administration of the Exchange made during the year the most important was the establishment of an additional contract and trading ring for handling sales of blanket and brown grades. While trading at the new ring has been light more activity is expected on this new contract when market conditions have adjusted themselves after November 1. Limits were also put on credit sales during the year and in view of the lower and more stabilized market prices since the middle of the year the daily trading limits have been decreased.

The operating expenses of the Exchange during the year amounted to $89,853.05 while the total income was $86,726.58. During the year the building fund account was increased by $34,638.51. The board of governors recommended that the annual dues of members be fixed for the ensuing year at $350, an increase from $275, which prevailed during the previous year.

F. R. Henderson Re-elected President

The annual election of officers of the Rubber Exchange was held on October 16 and resulted in the return of Francis R. Henderson as president for his third consecutive term. Charles T. Wilson was re-elected vice-president and J. C. Cuppia re-elected treasurer.

The following were elected members of the board of governors: Harold L. Bache, Robert L. Baird, William E. Bruyn, James T. Bryan, Herbert S. DeLanie, David D. Haldane, George H. Hutzler, Louis V. Keeler, David S. Kubie, Jerome Lewine, Fred Pusinelli and Edward J. Wade. William D. Paul, George Flach and Percy V. L. Bouton were elected inspectors of election.

The officers and new board were installed in office on October 18, at noon.

In speaking of the expected activities of the Exchange during the ensuing year, Mr. Henderson, in his report at the annual meeting said:

"Facing, as we do, a free market in rubber beginning November 1st, I feel that we can confidently expect a material increase in the activity of the Exchange. Restriction of output on the plantations during the last five years has been a deterrent to the encouragement of trading, and the new order of things will unquestionably make for better conditions in all branches of the industry.

"Unrestricted output will, of course, act as a check on any substantial move upwards, and at the same time the present level of price encourages the development of new uses, which in turn will increase consumption. In the end these opposing forces will work to the economic solution of the problems of planter and consumer alike. I believe the exchange offers a medium for the full expression of market views or price-trend opinions, and is the only means of compelling a healthful situation in our rubber market."

Schaphorst's CHATS *with the* ENGINEER

By W. F. SCHAPHORST, M.E.

Steam Flow Rule

HERE is a very simple rule which will enable any rubber plant mechanic to calculate the amount of steam that any pipe will carry, knowing the velocity of steam through the pipe and the pipe diameter.

The most common velocity allowed for steam is 6,000 feet per minute. However, sometimes higher velocities are required and sometimes lower velocities are desirable. The rule can be altered to take care of any velocity. It is as follows:

> "Square the internal diameter of the pipe in inches, and multiply by 5.46. Then divide by the specific volume of the steam in cubic feet per pound."

This rule gives the total number of pounds of steam that will be carried by the pipe at a velocity of 1,000 feet per minute.

For 2,000 ft. per min. multiply by 10.92 instead of 5.46;
For 3,000 ft. per min. multiply by 16.38 instead of 5.46;
For 4,000 ft. per min. multiply by 21.84 instead of 5.46;
For 5,000 ft. per min. multiply by 27.30 instead of 5.46;
For 6,000 ft. per min. multiply by 32.76 instead of 5.46;
For 7,000 ft. per min. multiply by 38.22 instead of 5.46;
For 8,000 ft. per min. multiply by 43.68 instead of 5.46;
For 9,000 ft. per min. multiply by 49.14 instead of 5.46;
For 10,000 ft. per min. multiply by 54.60 instead of 5.46;

For example, how many pounds of steam at 200 pounds absolute pressure per square inch, will flow through a pipe whose internal diameter is 4 inches? This is a typical problem.

First, look up the "specific volume" of 200-lb. steam. You will find it in any first class steam table. "Specific volume" is the number of cubic feet occupied by one pound of steam. The greater the pressure, the less the specific volume, of course, because at high pressures the steam is squeezed into smaller space.

You will find in your steam table that at 200 pounds absolute pressure, 1 pound of steam occupies 2.29 cubic feet. You therefore simply multiply 4 by 4, then by 5.46, and lastly divide by 2.29. The result is 38.1 pounds of steam per minute at 1,000 ft. velocity.

For other velocities, use the figures given above in place of the 5.46. In the event that you should want the velocity to be an intermediate figure, such as 4,500 ft. per min., multiply the 1,000 rate by 4.5.

Rubber Division, A. C. S., Group Meetings

The third meeting of the Los Angeles group of the Rubber Division of the American Chemical Society was held on October 16 with an address by C. R. Park, of the Delano Land Company and formerly research compounder of the Goodyear Tire & Rubber Company, on the subject of vulcanization. A general discussion followed his talk.

Dr. Philip Schidrowitz, of London, England, will be the speaker at the next meeting of the Boston group to be held November 7 at the Boston City Club. The subject of his address will be "Vulcanized Latex and Its Commercial Applications." Reservations for the meeting, which will open with a dinner at 6 p. m., may be made with C. R. Boggs, of the Simplex Wire & Cable Company, Cambridge, Mass.

Rim Production Remains Steady

PRODUCTION of automobile and other rims during September was practically the same as in August but showed a considerable increase over the output for September, 1927, according to the figures of the Tire and Rim Association of America, Inc. The number of rims inspected and approved during September totaled 2,315,604 as against 2,318,898 in August and 1,727,122 during September of last year. Airplane rims dropped from 3,046 in August to 554 in September.

Rim Size	Sept. 1928 No.	%	9 Mos. 1928 No.	%
Motorcycle				
28x2½	——	—	——	—
24x3	12,108	0.6	38329	0.2
26x3	6595	0.3	42211	0.2
28x3	——	—	753	0.0
Total	19403	0.9	81293	0.4
Clincher				
30x3½	97045	4.2	532405	2.7
31x4	——	—	2392	0.0
Total	97045	4.2	534797	2.7
18" Balloon				
18x3½	——	—	9362	0.0
18x4	98513	4.2	1032012	5.2
18x3.25	49958	2.1	129478	0.7
18x4½	15085	0.7	118312	0.6
18x5	2016	0.1	6477	0.0
Total	165572	7.2	1295641	6.5
19" Balloon				
19x2.75	37979	1.6	109899	0.6
19x3½	82623	3.6	1469291	7.4
19x4	359593	15.5	2154859	10.9
19x3.25	——	—	8664	0.0
19x4½	37385	1.6	756488	3.8
19x5	16792	0.7	46949	0.2
Total	534372	23.1	4546150	22.9
20" Balloon				
20x2.75	62669	2.7	211937	1.1
20x3½	15997	0.7	388736	2.0
20x4	255217	11.0	2850032	14.4
20x4½	105813	4.6	471240	2.4
20x5	56426	2.4	619163	3.1
20x6	13349	0.6	92523	0.5
Total	509471	22.0	4633631	23.5
21" Balloon				
21x2.75	428444	18.5	4673590	23.6
21x3½	105292	4.5	707983	3.6
21x4	28341	1.2	488563	2.5
21x4½	6864	0.3	267329	1.4
21x5	1358	0.1	8598	0.0
21x6	——	—	4233	0.0
Total	570299	24.6	6150296	31.1
22" Balloon				
22x3½	——	—	1775	0.0
22x4	——	—	3197	0.0
22x4½	——	—	2440	0.0
Total	——	—	7412	0.0

Rim Size	Sept. 1928 No.	%	9 Mos. 1928 No.	%
High Pressure				
30x3½-23	6769	0.3	54305	0.3
31x4 -23	——	—	640	0.0
32x4½-23	18763	0.8	78321	0.4
32x4 -24	16501	0.7	75078	0.4
33x4½-24	——	—	2316	0.0
32x3½-25	——	—	50	0.0
33x4 -25	——	—	2198	0.0
34x4½-25	428	0.0	6377	0.0
Total	42461	1.8	219285	1.1
20" Truck				
30x5	324489	14.0	1698659	8.6
32x6	35931	1.6	350735	1.8
34x7	6695	0.3	96934	0.5
36x8	5532	0.2	57300	0.3
40x10	——	—	4241	0.0
Total	372647	16.1	2207869	11.1
22" Truck				
36x7	——	—	8987	0.0
38x8	529	0.0	729	0.0
Total	529	0.0	9716	0.0
24" Truck				
34x5	94	0.0	14581	0.1
36x6	1608	0.1	35266	0.2
38x7	571	0.0	41849	0.2
40x8	978	0.0	24816	0.1
44x10	——	—	796	0.0
Total	3251	0.1	117308	0.6
Airplane				
8x3 SS	40	0.0	82	0.0
12x3 SS	34	0.0	107	0.0
18x3 SS	13	0.0	471	0.0
20x3 SS	——	—	6	0.0
20x3½ SS	36	0.0	1588	0.0
20x4 SS	2	0.0	750	0.0
21x4 SS	——	—	21	0.0
20x5 SS	22	0.0	98	0.0
20x6 SS	20	0.0	2311	0.0
20x8 SS	6	0.0	6	0.0
24x10 SS	——	—	53	0.0
18x4 Cl	381	0.0	9342	0.0
Total	554	0.0	14835	0.1
GRAND TOTAL	2,315,604		19,818,233	

August Tire Output Sets Record

AUGUST production and shipments of pneumatic casings and inner tubes surpassed all previous records in the history of the industry in the United States, and inventories have dropped to the lowest figure since the first of the year. The new peak in production is due to balloon casings which have reached their highest point of output, but high pressure casings manufactured during August totalled more than in any month since August, 1927. Shipments of high pressure tires were larger than in any month since August, 1926.

The figures for August as released by the Rubber Association represent 75 per cent of the total industry in the United States and have been brought up to represent 100 per cent in the following table:

TIRE AND TUBE PRODUCTION

	July, 1928			August, 1928		
	Prod.	*Ship.*	*Inven.*	*Prod.*	*Ship.*	*Inven.*
Pneumatic Casings	(All Figures Represent Thousands)					
All types	6,498	7,895	11,157	7,469	8,403	10,034
Balloon	4,479	4,878	6,954	4,904	5,085	6,649
High Pressure Cord	2,008	2,942	4,052	2,538	3,222	3,287
High Pressure Fabric	11	75	151	27	96	98
Solid and Cushion Tires	61	64	201	69	70	196
Inner Tubes						
All types	6,674	8,729	14,974	8,343	9,350	13,931
Balloon	4,321	4,768	9,058	4,632	4,874	8,820
High Pressure	2,353	3,960	5,914	3,711	4,476	5,111

RUBBER CHEMISTRY and Technology

Manufacture, Technology and Testing of Insulated Wires*

By CHARLES R. BOGGS

Factory Manager, Simplex Wire and Cable Company

THE history of insulated wire does not go farther back than early in the nineteenth century but copper wire was drawn as early as the 14th century for various uses. It was not until 1812, however, that there was used in Russia an insulated wire for exploding a mine. The next record of insulated wire was in 1817 when it was prepared only in a very crude way. In 1835 the invention of the Morse ticker for telegraph gave a great impetus to the use of insulated wire. In 1841 a cable was laid across New York Harbor and in 1845 the first lead covered cable was constructed. This cable was made by covering the wires with rope soaked in tar, which was then pulled into the lead pipe covering. This type of cable proved inefficient. In the period between 1847-1849 Siemens made the first use of gutta percha as insulation by cutting the gutta percha into strips and wrapping it around the wire lengthwise. The first trans-Atlantic cable was started in 1853 and on this cable gutta percha was used. Even to this day all trans-oceanic submarine cables use gutta percha instead of rubber for insulation. This cable broke during laying and in 1866 the first successful trans-Atlantic cable was laid.

The telephone was first shown at the Philadelphia exposition in 1876 by Bell and in 1877 Edison produced a successful electric light bulb. Both of these inventions of course made use of insulated wires. Early in the '80's, Habirshaw started to insulate wire with vulcanized rubber and in 1887 the Simplex Company was organized, the first insulated wire being produced in 1889.

The kinds and uses of cables are roughly divided into telegraph and telephone cables and power cables. Under these heads are all kinds of wires for power transmission, submarine, household and industrial uses. The power cables are differently made for high and low voltages, the high voltage cables offering serious problems of construction.

Insulation falls into four separate types: (1) *Varnished cambric*—the consumption of this type of insulated wire is small for it has bad dielectric properties; (2) *Paper insulation*—used on power and high voltage cables. This type is efficient and has a low cost. (3) *Gutta Percha*—not used for ordinary wires for it oxidizes easily and softens and hardens under the influence of temperature. Used largely on trans-Atlantic cables made in England. (4) *Rubber*—this material is efficient, does not soften, is flexible, waterproof and has good electrical properties. The only objection to its use up to this time has been its lack of permanency due to oxidation. This can be prevented to a large extent by the use of outer coverings and by the incorporation of anti-oxidants in the compound. The rubber content of rubber insulation varies from zero to 80% according to the use to which the finished cable is to be put. Abrasion, waterproofing properties, flexibility, etc., are some of the factors to be considered in the compound used. Tests on insulated wire include the normal physical tests as well as general electrical tests to determine the soundness and dielectric properties of the insulation.

An electrical research laboratory is also a necessary part of a modern insulated wire plant. An interesting feature of the testing in such a plant is the necessity of making tests after every operation so that each successive step is properly controlled.

Protective coverings for insulated wires and cables generally used are fibrous braids, lead, steel, rubber and other special types. Braids are used for mechanical protection and if weatherproofed, to protect against the weather, etc. Lead covering is used to keep out water and air but it is too heavy for general use. Steel is used for mechanical protection in flat band or galvanized armor wire which also serves to give tensile strength. Rubber, of course, is used on account of its ability to resist abrasion, its flexibility and to exclude water and air. Special protective coverings vary according to the types of wires and uses to which they are to be put.

The equipment and machinery necessary for manufacturing insulated wires differs in some respects from the type of machinery used in other rubber plants. Mixing mills, of course, are the same. Tubing machines differ in that greater speed of output is required and special heads are made to handle wire. Tubers are used to get the rubber directly on the wire or the rubber can be fed out in strips and wrapped around the wire. This method, however, leaves a seam. The unusual machinery required is for stranding and cabling.

Vulcanizing is done in the normal way in open steam and not in presses. The wire is run into pans containing chalk and then placed in open steam vulcanizers. Lead presses are used for pressing out lead.

The sales problem in connection with wires differs from usual customs in that factories sell direct to large users such as electrical goods manufacturers, public utility companies, the army, navy, etc. In bidding on contracts, the bid is usually made an estimate based on process costs. The actual cost of any one cable usually made is seldom obtained. Of course the process costs are accurately determined. Selling prices are always based on current market prices at the time of the sale and not on the original cost of copper or rubber. This is a custom of the insulated wire trade over a long period of years.

**An article based on an address made at the meeting of New York Group, Rubber Division, A. C. S., at the Town Hall Club, New York City, on October 10, 1928.*

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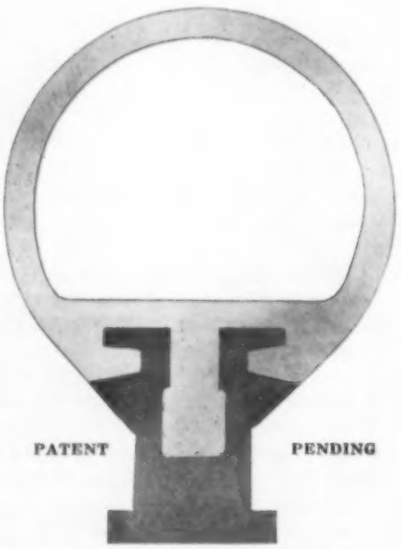

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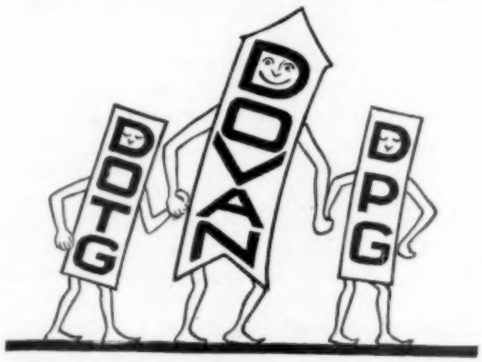

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EDITORIAL COMMENT

"Overtime Parking" of Stocks

IN a recent speech before a body of business executives, Julius Klein, director of the Bureau of Foreign and Domestic Commerce, made the statement that retail stores should beware of "overtime parking" of their stocks on hand. It was a happy application of an apt phrase and would seemingly apply to tire dealers with particular significance, in the light of the recent report of the survey on tire dealers' stocks, made by the Department of Commerce as of October 1 of this year. In that survey, stocks of automobile casings and truck tires on hand in the average tire dealer establishment were found to be higher than at any similar period in the last five years. It is not presumed that this means any overstocking, because sales volume today is manifestly greater than at any time within the five year period, but the expression of Dr. Klein is nevertheless pertinent as a warning to the accumulation of merchandise stocks and can well be studied by the individual tire dealer. "Overtime parking" of crude rubber stocks contributed to the red figures on the balance sheets of the manufacturing companies during the first half of the current year. "Overtime parking" of tire stocks with the average dealer may mean a corresponding red figure and the difference between profit and loss.

The Crude Rubber Situation

WITH stocks of crude rubber in the United States, in London, and at Singapore and Penang at a point lower than they have been at any time in the past two years and with consumption proceeding at a rate never previously attained, the once dreaded accumulations on the estates of the Far East have faded to an inconspicuous factor in the true world's rubber position. At most, as one prominent London broker figures, the total of these supplies to be released next month is not likely to do more than replenish available stocks in the United Kingdom and in America to the level at which they stood at the beginning of the present year.

A final and definite approximation of the influence of Malayan stocks was readily to be calculated from the census figures reported as of September 30. This survey placed the total accumulations in Malaya on estates of 100 acres or over and in the hands of dealers at 70,711 tons. This figure had been attained by monthly gains of about 4,000 tons since the end of June, and at this same rate of increase the absolute total to be exported on November 1 will hardly exceed 74,000 tons. Deducting the amount necessary for ordinary working stocks customarily to be found in Malaya, the actual surplus will be considerably under 50,000 tons.

Encouraging Notes

THERE is apparently excellent cause for encouragement to the rubber industry in the general news of the day, judging from the fragmentary reports of sales, financial statements covering the third quarter of the year and the comments of rubber executives. All of the major manufacturing companies, after writing off tremendous inventory losses covering the first half of the year, are reporting increases in both unit volume and dollar value of sales to date in the second half of the year. Such a condition speaks well for the present prosperous conditions prvailing generally throughout the country and especially in the automobile world and the industrial circles where rubber is used but it primarily speaks eloquently for the recuperatory qualities of the rubber industry in particular, which can recover from crises time after time with honor and profit to itself.

A Help to Better Trade Practices

THAT the National Better Business Bureau, Inc., has aided legitimate tire manufacturers in elevating the trade practice standards of their industry is indicated by the report of activities of the Bureau in the tire field for the year ending August 31, last.

Bureau assistance, the report states, was given along three major lines. These include (1) an intensive campaign against misrepresentation in the sales of retreaded tires, (2) a recommendation made by the Bureau that all second hand tires be uniformly and unmistakably marked as such by the tire manufacturers themselves, and (3) discussions with numerous individual advertisers relative to controversial claims appearing in advertising copy.

Such fine work on the part of the National Better Business Bureau combined with the plans of the Rubber Institute, are bound to go far in placing the tire trade of the United States on a high ethical plane.

The RUBBER AGE

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NATIONAL N QUALITY

NEWS of the INDUSTRY

Financial–Business
Building Operations
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ENGLISH DUNLOP BUYS CANADIAN COMPANY

Far East Holdings Are Involved in $200,000,000 Merger Which Is Regarded as Forerunner to Control of United States Company.

THAT the Dunlop Rubber Company, Ltd., of England has acquired a controlling interest in the Dunlop Tire & Rubber Goods Company of Canada as a unit in a $200,000,000 merger was announced on October 15 by Sir John George Beharrel, managing director of the English firm. The statement was made from Montreal, Que., where Beharrel completed the details of the amalgamation.

It is stated that this merger lines up some of the most important rubber interests in the world, as the transaction involves the transfer of the assets of the Dunlop company in the Far East to the English concern.

Originally an offshoot of the English firm, the Canadian organization was purchased by three Canadian financiers some years ago. In 1899 it was incorporated and took over the Canadian business of the American Dunlop Tire Company, a branch of the original Dunlop Pneumatic Tyre Company of London, England. The three Canadians in the deal are E. R. Ryckman, Senator Cox and Warren Y. Soper.

No Changes Are Contemplated

No change in the management of the concern is said to be contemplated at present, and no policy of expansion has as yet been announced. It is reported, however, that the next step of the English firm will be to acquire control of the Dunlop company in the United States.

Actual control of the Canadian company was acquired by the purchase of a large block of stock in a tire investment trust formed in 1917 to act as a holding company for the Dunlop Tire & Rubber Goods Company of Canada and the Dunlop Rubber Company of the Far East.

The authorized capital of the Canadian firm is given as common, $9,400,000; preferred, $600,000; paid up capital, $4,962,500 on common stock and $600,000 on preferred shares, both of $100 par value each.

The directors of the company include the following: E. R. Ryckman, president and general manager, Toronto; G. H. Easton, London; William McMaster, Montreal; A. B. Purvis, Montreal; W. Coyle, Wilmington, Del.; D. E. Benyon, Toronto; M. C. A. Campbell, Toronto; and A. E. King, Toronto.

Among those with Sir George Beharrel on his visit to Montreal were E. B. Germain, Sir John Milbanks, A. M. Geddes, and F. A. S. Zarvasy. Mr. Zarvasy is the financier backing the British newspaper chain of which Lord Rothermere is the head.

PARTRIDGE IS TO HEAD GOODYEAR ENGLISH UNIT

The appointment of A. G. Partridge, manager of the western division for the Goodyear Tire & Rubber Company, as managing director of the Goodyear plant at Wolverhampton, England, has been announced by company officials. Mr. Partridge will take the place of the late Charles P. Skinner.

Joining Goodyear ir 1926, Mr. Partridge was made western manager in July of the

A. G. PARTRIDGE

following year. He had previously been manager of pneumatic tire sales for the B. F. Goodrich Company for two years and from 1905 to 1921 was vice-president and sales manager of the Firestone Tire & Rubber Company. Prior to that he had been identified with the Diamond Rubber Company with offices in New York City.

A. J. Sears, manager of Goodyear's Chicago branch, will succeed Mr. Partridge as western sales head, and F. W. McConkey, Charlotte branch manager, will take up the position vacated by Mr. Sears. Mr. Sears has been with Goodyear since 1912, starting as a salesman in Minneapolis and subsequently becoming branch manager at St. Paul, at Sioux City and at Milwaukee. He was later promoted to western tire sales manager, to St. Louis branch manager and then Chicago branch manager. Mr. McConkey, who joined Goodyear in 1919, was southern tire sales manager before being appointed Charlotte branch head.

Other recent appointments in the Goodyear organization are those of C. H. Williams, manager of the dealer development department, to Los Angeles as assistant to J. K. Hough, coast sales manager, and P. E. Hanaver, assistant Boston branch manager, to the position vacated by Mr. Williams. Mr. Hanaver has been with the company since 1919 and Mr. Williams since 1912.

FIRESTONE OPENS HIS NEW ENGLISH FACTORY

$3,000,000 Plant Near London is Formally Put in Operation by Telephone Message by Mr. Firestone From Office in Akron.

Sitting at the desk of his Akron office, Harvey S. Firestone on the morning of October 16 spoke through a microphone the words that officially opened the newly completed $3,000,000 factory of the Firestone Tyre & Rubber Co., Ltd., a few miles outside London, England. The start of operations at this plant marks the inception of the Firestone Tire & Rubber Company's active entrance into the British manufacturing field through its subsidiary organization.

An audience of 300 persons was present at the new factory to witness the formal opening and to hear the broadcasting of Mr. Firestone's message. After his brief address through the microphone, Mr. Firestone was transferred to an ordinary telephone receiver and exchanged conversation for several minutes with his son, Harvey S. Firestone, Jr., and with Sir William Joynson-Hicks, the British home secretary, who attended the branch plant opening. Stacy G. Carkhuff, secretary of the Firestone Tire & Rubber Company, was also present to represent the home organization.

"It is a great pleasure to me to greet the Firestone British organization," Mr. Firestone said in part in his message. "My English and European friends have honored us by coming to the opening of our English factory. We are today living in a great age. I am now sitting in my office at Akron, Ohio, separated from you by the great Atlantic Ocean, and I believe that you will hear every word that I say.

Calls Factory Bond of Friendship

"I regret that I am unable to be with you in person; however, I have delegated this pleasure and honor to my eldest son, Harvey, Jr., who will extend my personal greetings to each of you." He concluded by saying that the new factory would cement still further the friendly relations between the English-speaking peoples.

According to telephone engineers, this was the first time that such a message has been broadcast eastward over the Atlantic from Ohio. Mr. Firestone's telephone conversation was transmitted over a specially installed direct line to New York City. At the Long Island station of the American Telephone & Telegraph Company, the message was placed on a radio broadcasting circuit and relayed to the Croydon, England, station, where it was again put on the wires and transmitted to the listening audience about 10 miles from London.

The site of the new Firestone plant is on the Great West Road, near Brentford.

U. OF ILLINOIS ALUMNI WIN RUBBER FELLOWSHIPS

Sheldon C. Nicol and John E. Whittenberg are holding the Goodyear and Firestone fellowships for the study of rubber chemistry at the Municipal University of Akron, it was announced on October 4. Both are graduates of the University of Illinois and won their appointments in competition with 61 other recent university graduates.

They are now doing special work under Professor Hezzleton E. Simmons, head of the chemistry department, and are in charge of several of the regular classes in chemistry at the university. The fellowships are valued at $1,000 each, and their holders are not required to pay the regular university fees. After completing their work at the university both men will be given positions in the plants of the companies offering the fellowships.

WISHNICK-TUMPEER BUYS CONSUMERS GAS WELLS

The Century Carbon Company, owned by Wishnick-Tumpeer, Inc., New York City, has recently purchased the entire natural gas holdings of the Consumers Gas Company of Louisiana. The latter company was formerly supplying the gas requirements of the Century company.

This step assures an ample supply of natural gas for the uninterrupted production of carbon black by the Wishnick-Tumpeer subsidiary.

The General Tire & Rubber Company is placing another tire line on the market which will be known as the General dual balloon. It is claimed to be an especially durable tire and to be in harmony with the production of new high-powered automobiles.

RUBBER INDUSTRY IS NEW POLITICAL ISSUE

The two candidates for Congress in the Akron district have made their opinions as to the future of the local rubber industry an issue in the present election campaign. Francis Seiberling, a local attorney and Republican nominee, has declared that "the British tariff and freight rates in this country combined form circumstances upon which it is safe to say there will be no major expansion of the rubber industry in Akron."

Judge A. F. O'Neil, Democratic candidate, in reply assails the "defeatist attitude" of his rival and predicts that "Akron will see greater expansion in the rubber industry in the next 20 years than she has seen in the past 20." He cites the fact that one company is planning to double its size and capacity and adds, "If the candidate's limited vision and foresight were shared by an industrial leader of the same name, the Seiberling Rubber Company of Barberton would never have been started."

SCRAP RUBBER DEALERS HOLD AUTUMN MEETING

A meeting of the Scrap Rubber Division of the National Association of Waste Material Dealers, Inc., was held on October 16 at the Hotel Astor, New York City. Several important matters were considered at the session.

Among the new members recently admitted to the association are the United States Rubber Company, New York City; the Grasselli Chemical Company, Cleveland, O.; and A. Schulman, Inc., Akron, O.

Goodyear Signs Contract to Build Dirigibles

THE United States Navy Department on October 6 officially signed a contract with the Goodyear-Zeppelin Corporation for the construction of two rigid airships larger than any others ever built. The new dirigibles will be called the ZRS-4 and ZRS-5 and will be 785 feet long with a gas capacity of 6,500,000 cubic feet or greater than that of the Los Angeles and the Count Zeppelin combined. The officials shown above are: front row, left to right, P. W. Litchfield, president of the Goodyear-Zeppelin Corporation, and Secretary Curtis D. Wilbur of the Navy, signing the contracts; back row, left to right, W. C. Young, Dr. Karl Arnstein, Assistant Secretary of the Navy for Air Edward P. Warner, and Admiral J. R. Wahl.

George E. Hall

George E. Hall, for the past 12 years president and general manager of the Boston Woven Hose & Rubber Company, Boston, Mass., died after an attack of heart trouble at Osterville, Mass., October 3.

Born at Brattleboro, Vt., on August 2, 1868, Mr. Hall was formerly connected with

GEORGE E. HALL

the International Paper Company, Watertown, N. Y. He joined the organization of the Boston Woven Hose & Rubber Company in 1907, being elected president in 1918.

Mr. Hall continued actively in the business almost to the very day of his death. He was apparently in normal health when he left the office for a few days of rest and recreation at Cape Cod. His death was entirely unexpected, as he was stricken suddenly and died within a few minutes.

Howard Edwin Raymond

Howard Edwin Raymond, a director of the B. F. Goodrich Company and vice-president of the Yokohama Rubber Company, died October 8 at his home, 45 Park Avenue, New York City. He was 64 years old. Funeral services were held October 11 in the Universalist Church of Our Father, Brooklyn, N. Y.

Mr. Raymond, who was born in Brooklyn, began his business career as a wrapper boy in Loeser's department store in that city. He later went to Chicago, and, after engaging in the real estate business a few years, became vice-president of the Sterling Bicycle Company. This was in the early '90s when the bicycling craze was at its height, and Mr. Raymond served several years as president of the League of American Wheelmen.

In 1895 Mr. Raymond entered the employ of the B. F. Goodrich Company as sales manager and in 1920 resigned as vice-chairman of the board of directors. He established both the French and the English branches of the company.

Mr. Raymond was a member of the Chicago Athletic Club, New York and Colonial Yacht Clubs and the Union League Club. He was never married.

AETNA RUBBER COMPANY HAS LARGE FORD ORDER

The Aetna Rubber Company, Ashtabula, O., is stepping up its production schedule to handle a recently received order from the Ford Motor Company for 1,000 steering wheels a day. The plant is being enlarged to take care of the production of the new line.

The Ford steering wheels are made of hard rubber pressed on metal, and it is expected that the order may be increased from time to time as the Ford Motor Company's own production is raised. The Aetna Rubber Company manufactures a line of battery boxes and other hard rubber parts.

C. P. HALL ORGANIZES CALIFORNIA COMPANY

Following an extensive trip of investigation of the rubber manufacturing centres along the Pacific Coast, C. P. Hall, president of the C. P. Hall Company, manufacturers of rubber chemicals, has decided to organize a separate western firm to serve these plants. This will be known as the C. P. Hall Company, Inc., of California, and will be operated entirely apart from the parent organization at Akron.

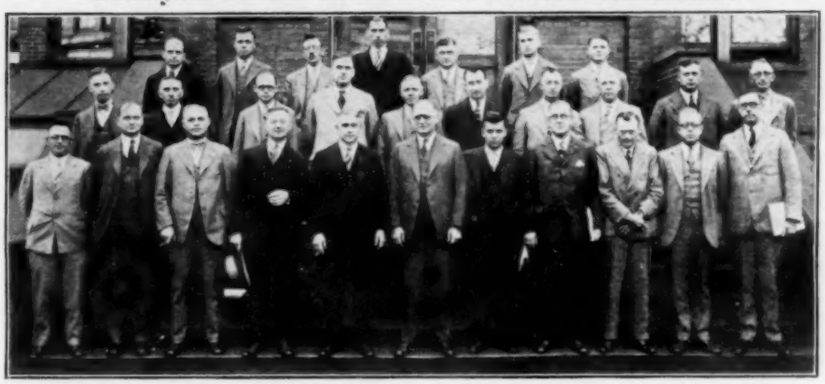
Sales offices and warehouse facilities at Los Angeles and at Oakland will be maintained, and several lines besides those of the parent company will be distributed. The

B. E. DOUGHERTY

new firm will represent the J. P. Preston Company on mica, the General Magnesite & Magnesia Company on magnesia, the Thompson Weinman Company on clays, and Godfrey L. Cabot, Inc., on carbon black.

B. E. Dougherty, acting in the capacity of vice-president and general manager, will have the supervision of the California organization in his charge. Mr. Dougherty, who is well known to both the manufacturing and supplying fields of the rubber industry, was formerly director of purchases for the Republic Rubber Company, Youngstown, O.

Goodyear Heads Meet at Inter-Plant Conference



OFFICIALS of the Goodyear Tire & Rubber Company from all over the world gathered at the annual inter-plant conference held at Akron during the week ending October 13. Those shown in the picture above are the following:

Left to right, front row: J. P. Heaney, superintendent, Goodyear textile mills, Los Angeles; S. A. Steere, manager fabric development; G. F. Goudreault, superintendent, St. Hyacinthe Mills; E. H. Koken, general superintendent, Canada; C. C. Slusser, vice-president and factory manager; Wm. Stephens, general superintendent, Akron; W. L. Hain, manager Inter-Plant Relations; C. W. Young, superintendent, Killingly Mills; Wm. Urquhart, general superintendent, Australia; G. I. Parmenter, superintendent, Cedartown Mills; L. S. Hall, superintendent, Devon Mills.

Second row: F. G. Wilmott, service department, New Toronto; A. M. Hardy, assistant superintendent, Bowmanville; R. A. Hayworth, chief chemist, New Toronto; A. R. Stannah, machine design, New Toronto; H. H. Travis, factory accounting, Los Angeles; W. D. LaDue, chief engineer, England; E. J. Christy, superintendent, Wheeling Twp. Coal Co.; C. E. Falor, superintendent, Marathon; H. O. Allman, foreman Division B, Canada; H. A. Barron, division superintendent, Los Angeles.

Third row: C. J. Roese, manager, Tech Service, Los Angeles; M. G. Anderson, Highway Transportation, Los Angeles; H. M. Cryder, development, New Toronto; M. A. Neal, development, Bowmanville; L. A. Barrett, foreman Division A, New Toronto; C. E. Shumaker, personnel efficiency, New Toronto; R. J. Brady, purchasing agent, Los Angeles.

SAMSON TIRE FACTORY TO ADD NEW MACHINERY

The plant of the Samson Tire & Rubber Company at San Diego, Cal., is now installing new equipment designed to bring the factory's production up from 55,000 to 70,000 tires a month. An expansion is necessary due to the fact that the company has received heavy additional contracts for its tires, according to Adolph Schleicher, president of the firm.

B. S. Brown, manager of the San Diego plant, reports that 325 men are listed on the factory payroll and that the plant is being operated 24 hours a day, seven days a week. This plant is manufacturing first quality Samson tires in five different sizes.

SAFETY IS ON INCREASE AT GOODRICH FACTORIES

That fewer accidents have occurred at the plant of the B. F. Goodrich Company at Akron since July 1 is attributed to the plant safety campaign started at that time. In the tire department, where about 5,000 persons are employed, the percentage of accidents is 56 per cent lower in the last four months, and the record during July was 61 per cent better than the same month last year.

There has been no fatal accident for several years in this department in which the most dangerous plant operations are carried on.

FIRESTONE IS HONORED AS PIONEER IN RUBBER

Harvey S. Firestone, president of the Firestone Tire & Rubber Company, was one of eight industrial pioneers selected as guests of honor at a special dinner to pioneers of American industries under the auspices of Columbia University at New York City on October 24. Speakers at the dinner included Lord Melchett, chairman of the Imperial Chemical Industries, Ltd., and Dr. Nicholas M. Butler, president of Columbia University.

The other pioneers and the industries they represented were Orville Wright, and Glenn H. Curtiss, aviation; Henry Ford, automobiles; Charles M. Schwab, steel; Thomas A. Edison, invention; George Eastman, photography; and Julius Rosenwald, merchandising.

Columbia Plant is Busy

The Columbia Tire & Rubber Corporation, Portland, Ore., is operating with a staff of 20 persons on contracts for tires, and the force is to be increased, according to the management. C. F. Brown has been appointed sales manager from the factory.

CATALPO!

HUBLER IS RE-ELECTED PRESIDENT OF FAULTLESS

C. D. Hubler was re-elected president of the Faultless Rubber Company at the annual meeting held September 28 at Ashland, O. P. A. Myers was again chosen vice-president and George Meiler, secretary. T. W. Miller was re-elected chairman of the board of directors, and E. F. Miller was added to the executive committee.

The directors elected were T. W. Miller, P. A. Myers, J. R. Nutt, L. B. Williams, John C. Myers, C. D. Hubler, M. V. Semple, E. F. Miller, F. L. Parker, R. C. Foster, I. L. Miller, Guy C. Myers and John S. Fleek.

GOODRICH USES FIGURES IN PUBLICITY RELEASES

The B. F. Goodrich Rubber Company, through its Goodrich Feature Service, is securing a great amount of valuable newspaper space by presenting routine factory statistics to the press in a popularly written style. In a recent release, it was stated that enough coal is burned at the Goodrich Akron plants in a single day to supply a city of 20,000 persons. This was based on the fact that 530 tons of coal are used daily at the Goodrich factories.

Another recent release featured the fact that 180,000,000 miles of cotton cord is worked into Goodrich tires in the course of a year—"enough to circle the earth more than 7,000 times." In weight it was stated that this "mileage" of cotton totaled 15,000 tons or 60,000 bales.

NORTHERN COMPANY WILL OPEN DALLAS WAREHOUSE

The Northern Rubber Company of Akron will open a warehouse in Dallas, Tex., on October 15 to serve as a distributing point for all the southwest territory of the country. W. B. Pifer, who has been in charge of sales for the company in the southwest for the last two years, will be placed in charge of the new warehouse. Owen Moynihan, sales manager, and Benjamin F. Siffert, advertising manager, will go to Dallas for the opening of the structure.

This will be the first warehouse established by the Northern company outside Akron, for all shipments have previously been made direct from the factory in Barberton.

Goodyear Airplane Tires

The Goodyear Tire & Rubber Company has announced the addition of two new types of tires to the Goodyear airplane line. These will be a 26 x 4 straight side and 44 x 10 drop center and one new size, the 14 x 3 straight side, all-weather tread.

CATALPO!

Sails for Europe

James Carroll, a director of the Dunlop Rubber Company, about to leave for Europe aboard the S.S. Carinthia with Mrs. Carrol. On sailing, Mr. Carroll asserted that he has faith in the stability of the rubber market.

RUBBER CUTS VIBRATION ON NEWEST STREET CARS

A new street car, known as the Birney car, after its inventor, C. O. Birney, has recently been completed in the shops of the St. Louis Car Company and was exhibited at the convention of the American Electric Railway Association last month. Rubber parts for insulation and reduction of vibration were furnished by the Firestone Tire & Rubber Company.

Live rubber separates the steel flanges fom the car wheels to reduce vibration and noise. Rubber insulation at the points of contact between car body and driving units is another feature of the new trolley.

TEXTILE RUBBER COMPANY TAKES MEDINA FACTORY

The Textile Rubber Company, makers of all kinds of moulded mechanical rubber products, has moved its factory from Akron to the old Gardencraft plant at Medina, O. Production was started in the Medina buildings on October 1 with 40 persons employed.

The company moved its establishment to secure the advantage of more room, better power facilities than in the Akron plant, and an attractive inducement offered by the owners of the property. Incorporated in 1922, the Textile Rubber Company has an established business in its line and expects to expand in its new location.

RUBBER BALL COMPANY INSURES ITS EMPLOYES

The Goodyear Rubber Ball & Novelty Company, Malone, N. Y., has provided its employees with life, health and non-occupational accident insurance, the plan being underwritten on a co-operative basis whereby the employer shares the cost with the workers. The insurance has been arranged through contract with the Metropolitan Life Insurance Company.

Each subscribing female employee receives $500 of life insurance and each male $1,000. Sick and accident benefits for the former amount to $7 a week, while men receive $10 weekly. The sick and accident benefits will be paid when an employee is unable to work due to sickness from any cause or injury received while off duty. An employee becoming completely disabled before the age of 60 will receive the full amount of his or her insurance with interest in monthly instalments. In addition, sick or injured employees are offered the advantages of a visiting nurse service.

CORPORATION IS FORMED TO PRODUCE GOLF BAGS

The Atlantic Products Corporation has recently been organized to take over the manufacturing of rubber golf bags, tennis racquet covers, shopping bags and rain jackets formerly done by the Pocono Rubber Cloth Company, Trenton, N. J. The Pocono Company began making golf bags a few years ago, turning out 12,000 in the first year of production, and by 1927 had increased this annual output to 50,000.

It was decided to separate the rubber cloth business from the golf bag line, and the new company was organized with Theodore S. Cart, secretary of the Pocono Company, as president. Robert C. Roebling is vice-president, and the board of directors includes Harry Gihon, Francis G. Cart and Austin C. Cooley. The new company has already leased a plant at Trenton and started separate operations.

GENERAL MOTORS SUED ON SPEEDOMETER CABLES

The S. S. White Dental Manufacturing Company, Staten Island, N. Y., has filed suit in the United States district court at Wilmington, Del., asking that the General Motors Corporation be enjoined from continuing alleged infringement of patents on flexible cables used on speedometers and patents on machinery used in their manufacture. The plaintiff states that up until about two years ago, General Motors purchased large quantities from it, but that they now are being manufactured by the A. C. Spark Plug Corporation, a General Motors subsidiary.

The S. S. White company claims that General Motors is not licensed to build the machinery for these cables or to manufacture the cables. As plaintiff, it asks that General Motors be compelled to render an accounting of profits derived from manufacture, use and sale of such cables in A. C. speedometers and that damages be assessed in its favor in the amount of three times such profits.

Names in the News

WILLIAM STEPHENS, general superintendent of the Goodyear Tire & Rubber Company, has returned to Akron after a six months' tour of the world in which he passed through a score of countries and visited all Goodyear foreign factories and many of the branches. When he arrived at New York on the Leviathan, the Puritan, Goodyear dirigible, flew over the ship and dropped a message to him.

R. A. MCCORKLE, who was recently appointed manager of the manufacturers' sales

R. A. McCORKLE

department of the Miller Rubber Company, Akron, O., has taken up the duties of his new position.

F. A. SEIBERLING, president of the Seiberling Rubber Company, has been appointed as representative from the 14th congressional district on the Hoover-Curtis volunteer committee from Ohio. The purpose of the organization is to carry the Hoover campaign into non-political circles on a "continued Republican prosperity" issue.

H. W. MCCRACKEN, former sales promotion manager of the American Rubber & Tire Company, has been made general manager and secretary-treasurer of the Yankee Rubber & Tire Company, northern Ohio distributors for American-Akron, American-Cameo and American-Globe tires. He was previously connected with the Pennsylvania Rubber Company.

N. A. DAILY has resigned as plant accountant and cashier with the American Hard Rubber Company after 34 years of service. Mr. Daily has been prominent for years in Akron fraternal organization circles.

LESLIE W. ROUZER has been appointed Chicago district manager for the Sun Rubber Company, Barberton, O. He will call on the trade in the Chicago metropolitan district and in Milwaukee.

TOM SMITH, of the Sun Rubber Company, has been appointed a member of the advisory board of the Barberton, O., Republican central committee. Others on the board include DUFF DAVIS, Shunk Rubber Company; GEORGE SEIBERLING, Lambert Tire & Rubber Company; and C. W. SEIBERLING, vice-president of the Seiberling Rubber Company.

J. H. RANDLE, Cleveland branch manager of the Goodyear Tire & Rubber Company, was host to the sales force of Davis & Stalker, Willoughby, O., recently. The Davis & Stalker organization was the winner in their division in the national sales contest just conducted by the Goodyear company.

E. E. WARFIELD has joined the Manhattan Rubber Manufacturing Company, Passaic, N. J., in the capacity of merchandising director. He has long been known to the automotive trade through various affiliations.

B. W. ROGERS has been appointed representative for the Akron territory by the Falk Corporation, Milwaukee, Wis. Mr. Rogers had formerly been connected with the B. F. Goodrich Company.

A. E. JURY was appointed on October 1 as agent of the Winnsboro Mills, Winnsboro, S. C., in addition to his duties in supervision over the textile development activities of the United States Rubber Company. The Winnsboro Mills manufacture the cords used in tires made by the United States Rubber Company.

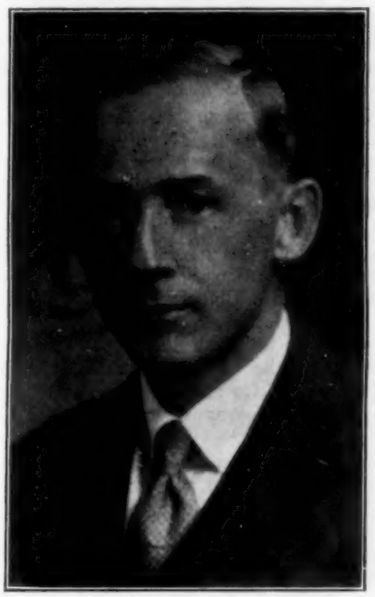
F. N. THOMAS has been appointed manager of the Sacramento factory of the Goodyear Tire & Rubber Company, succeeding E. C. NEWBAUER, who resigned to enter the local retail field. FRANK DANIELS, who has been a Goodyear city salesman in Sacramento, has been transferred to the Spokane branch where he will be in charge of the office.

ROBERT EARLE, formerly inside salesman at the Hood Rubber Products Company Boston branch, will in the future be in charge of the firm's newly opened stock depot at Springfield, Mass. Two salesmen, CHARLES SHERMAN and MARK C. NEWTON, will cover the territory served by the depot.

FRED L. MORGAN, manager of the auto sales department of the Goodyear Tire & Rubber Company, has purchased the first home in Akron wired under the standard Red Seal plan of the Electrical League of Akron. The dwelling was visited by 10,000 people while it was open for public inspection.

P. W. LITCHFIELD, president of the Goodyear Tire & Rubber Company, made a gift of $10,000 to the University of Akron endowment fund during the recent campaign. Mr. Litchfield is a member of the board of directors of the university.

DR. WILLIAM F. ZIMMERLI, formerly of the B. F. Goodrich Company, has joined the technical staff of the Roessler & Hasslacher Chemical Company and will be connected with their rubber division service department in Ohio and the middle west. Dr.



DR. WILLIAM F. ZIMMERLI

Zimmerli, after receiving his degree of B.S. from the Brooklyn Polytechnic Institute in 1909 and a degree of Ph.D. from Heidelberg, Germany, in 1912, worked two years with Goodrich as research chemist and a similar length of time as assistant professor of chemistry at Akron University. He served as chief chemist with Pfaudler & Company, Rochester, N. Y., and with the Howe Rubber Corporation, New Brunswick, N. J., before returning to Goodrich in 1924.

HARVEY FIRESTONE, JR., vice-president of the Firestone Plantations Company, was invited to attend a meeting of leaders in the Episcopal church campaign to hasten the completion of the Washington Cathedral. The meeting was held October 13 at Washington, D. C.

JOHN A. MACMILLAN, president of the Dayton Rubber Manufacturing Company, acted as host to the members of the Ohio Newspaper Women's Association at the Dayton Women's Club on October 19.

A. B. DUNBAR, sales manager of the Triangle Tire & Rubber Company, Canton, O., will return to his office November 1 after an extensive business trip through the south.

Timely Financial News

TIRE COMPANY STOCKS ATTAIN HIGHER PEAKS

Goodyear Common Surprises by Spectacular Rise of 28 Points and Subsequent Decline as Several Stocks Reach New High Levels for the Year.

THE majority of rubber company stock issues showed consistent gains during the past fortnight, and five of these stocks attained new high marks for the current year. Active trading prevailed during the entire two weeks, and only a scattered few of the many rubber company shares showed a decline at the end of the period.

Goodyear common was the sensation of the fortnight, going steadily from 70¼ to 98⅞ in the first week and dropping back toward the end of the period to 84¼. Reports of the company's strong position, combined with the announcement of the contract signed by its subsidiary, the Goodyear-Zeppelin Corporation, to build two giant dirigibles for the United States Navy, served to bring its stock up to a new 1928 peak. The decline followed closely after the statement that the company would issue new common stock to its shareholders to finance a projected program of expansion.

The fact that the General Tire & Rubber Company has been able to plan an extension of its facilities at a cost of more than $1,000,000 without additional financing acted as an impetus in sending its common stock up 18 points to a new high of 205. General preferred also rose in trading, as did Goodyear preferred, the latter going to a new high of 100⅞.

Always among the most active of the smaller company issues, Mohawk common made a new advance of 30 points to a year's high of 225, but fell back in later trading to 210. Another stock attaining a new peak was Lee Rubber & Tire which advanced to 26¼ but later receded.

Announcement of the fact that Seiberling common was being groomed for admission to trading on the New York Stock Exchange failed to cause any reaction in its selling price, the quotations falling off a fraction of a point during the past two weeks. India went up 6½ points to 48, but still remained considerably below its high mark for the year. Among the other stocks that registered gains were Falls, Firestone, Fisk common and preferred, Goodrich common and preferred, Kelly-Springfield preferred, Norwalk, Seiberling preferred, and United States Rubber common and preferred.

CATALPO!

Kelly-Springfield Stock Ruling

The Committee on Securities of the New York Stock Exchange has ruled that transactions in Kelly-Springfield Tire Company common stock, unless made specifically for cash, shall be ex-rights October 17. Rights may be dealt in on a when issued basis on and after October 17. Transactions in rights must be settled October 25. Rights expire November 1.

Pioneer Plant Re-opened

Operations at the Pioneer Rubber Mills, Pittsburgh, Cal., were resumed in the latter part of September after a lay-off of six weeks. The company reports that 90 men and women have returned to work and that a banner year is expected.

Stedman Preferred Dividend

The board of directors of the Stedman Products Company, manufacturers of rubber flooring, of South Braintree, Mass., has declared the regular quarterly dividend of $1.75 a share on the preferred stock, payable October 1 to stockholders of record as of September 25. This is the 40th consecutive dividend declared by the company.

NORTHERN RUBBER TO PAY DIVIDENDS ON PREFERRED

The preferred stock of the Northern Rubber Company, Barberton, O., has been placed on a dividend basis, and checks for the initial dividend were mailed to stockholders October 1, according to L. J. Schott, president of the organization.

At a special directors' meeting September 29 it was announced that unit production has been running 70 per cent higher than in 1927 and that future plans call for a still larger increase in 1929. The company's new warehouse at Dallas, Tex., was formally opened on October 15.

Late Stock Prices

	Last Price		—1928—	
	Oct. 20	Oct. 4	High	Low
Ajax	9	9⅜	14⅜	7½
Falls	8¾	8¼	13	4½
Faultless	31½	32½	39¾	30
Firestone	172	170	232	165
do. 6% pfd.	110	110	112	109
Fisk	11¾	10⅝	17⅜	8⅞
do. 1st pfd.	60	57½	91½	55¾
General	205	187	205	165
do. pfd.	99	97½	111	98
Goodrich	82¾	81¼	99⅝	68½
do. pfd.	111	110¼	115⅝	109½
Goodyear Com.	84¼	70⅝	98⅞	45¼
do. pr. pfd.	100	99	100⅞	92½
Hood	26½	29	43	25
India	48	41½	57⅜	16
Intercontinental	9½	9½	21¾	8¼
Kelly Springfield	21⅞	23½	27¾	15
do. 1st pfd.	85	81⅞	87	58
Lee	21	20¾	26¼	17¼
Miller	22½	—	27	18⅞
do. pfd.	80	80¾	97½	70
Mohawk	210	195	225	29¾
do. pfd.	90	93	95	55
Norwalk	6¾	5¼	7½	2½
do. pfd.	—	48	48	33¾
Seiberling	49	49⅞	52¼	35
do. pfd.	106	103¾	107½	102
U. S. Rubber	41	38⅝	63¼	27
do. pfd.	69	66¾	109⅝	55

GOODYEAR TO CONSTRUCT NEW PLANT IN THE SOUTH

The Goodyear Tire & Rubber Company is to offer its stockholders the right to subscribe to additional shares of common stock at $50 a share on the basis of one share for every four shares held. The company expects to derive slightly more than $10,000,000 for its expansion program from this new issue.

In his letter to the common shareholders of the company, announcing the offering of additional stock, P. W. Litchfield, president, said in part:

"The company's business is in a flourishing condition. In spite of heavy losses in the first half of the year, incident to the sudden discontinuance of British restriction of rubber production, indications are that the company will be able to report satisfactory net profit for the year.

"Goodyear products today have acceptance with the consuming public to a greater degree than ever, and sales promise greatly to exceed any previous year. Productive capacities have been taxed to their utmost, and the company has repeatedly found itself unable to fill orders on hand. The Board has, therefore, come to feel that plant expansion is essential that we may keep pace with growing business and the increasing demand all over the world for Goodyear products. In addition to moderate extension of existing plant facilities in the United States and abroad, it has been decided to establish a tire manufacturing unit in the South to take advantage of favorable production costs and distribution economies.

"It is believed that common shareholders can with best advantage to themselves and the company furnish additional funds necessary to reimburse the treasury in part for expenditures in this expansion program, for larger requirements of working capital in connection therewith, and for retirement December 15 of the remainder of our three-year notes.

"In addition to providing increased plant capacity and working capital, proceeds of this sale of common stock will have further effect of so improving the ratio assets provided for in senior securities as to permit the resumption of dividends on common stock earlier than otherwise possible."

The Seal Rubber Company, Akron, received its incorporation papers October 4, its capital being given as $25,000. Joseph B. Harris, president of the firm, says that no change is contemplated in the operation of its plant which now employs 50 persons in the manufacture of rubber goods.

CATALPO!

Rubber Goods and Specialties

Hunting Breeches

The principal feature of these hunting breeches produced by the Drybak Corporation, 93 Worth street, New York City, is that no lacing is required, the elastic webbing at the bottom giving a perfect fit over any size calf. The breeches are reinforced

over leg and seat with extra large patches of rubberized duck to make them rainproof as well as snag, rip and bug proof.

Dunlop Super Tire

In accordance with the policy of other leading manufacturers of introducing a special super tire, the Dunlop Tire & Rubber Company, Buffalo, N. Y., is now marketing a casing advertised as the "John Boyd Dunlop." The new tire is claimed to be adaptable to high-speed driving and to the emergency demands of high-pressure four-wheel brakes.

Minnow Bucket

For fishermen who use live minnows as bait, this new Air-Fed bucket is manufactured by the Air-Fed Manufacturing & Stamping Company, Inc., Quincy, Ill. Its

basic principle consists simply of a method of letting air bubble up through the minnow water from a storage chamber so as to keep the minnows alive over long trips. A permanently connected hand pump is at all times ready to "shoot" a few pounds of pressure into the air chamber through a rubber tube. The bucket is of the full-floating type.

Baby Chair and Crib

Designed to be used either as a baby chair or as a crib, this device is offered by the Ben Koral Company, 351 East Ohio Street, Chicago, Ill. It hangs over either side of the front seat of an automobile, and its construction permits it to revolve in any direction desired. All parts of the crib that come into contact with the upholstery of the car are covered with rubber. To convert the chair into a crib, it is necessary only to release the front and back without removing the child from the chair. When open, the crib measures 31 inches in length. It weighs 9 pounds.

Pink Rose Erasers

Known as the Venus pink rose eraser, this new soft rubber has just been added to the line of the American Lead Pencil Company, 500 Willow Avenue, Hoboken, N. J. It is said to be capable of erasing cleanly and

easily with but little effort. Made in the block shape in sizes 8, 36, 40, 60 and 80, it is packed in pound boxes, the number of the eraser indicating the number of pieces to a box. It is also made in a double beveled design as No. 2948 and packed in quarter gross boxes.

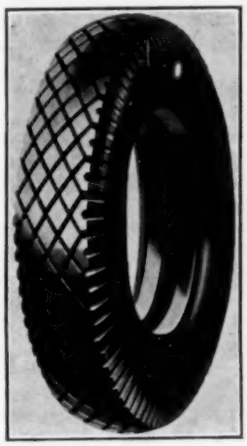
Novelty Rubbers

Light in weight, these "Ariel" novelty rubbers offered by the Mishawaka Rubber & Woolen Manufacturing Company, 280

Water street, Mishawaka, Ind., have a strong appeal to women because of the moire finish and the trim lines.

Dump Truck Tire

This new dump truck pneumatic tire announced recently by the Goodyear Tire & Rubber Company, Akron, O., is designed especially to resist sidewall gouging and scuffing frequently encountered in road construction work. While the walls of the tire



themselves have not been made heavier, the tread has been widened and extends well up along the sidewall. The sidewalls, as a result of the wider tread, are more nearly vertical, making them practically immune to gouging or cutting. While designed particularly for dump truck work, it is also recommended for all work where tires show undue sidewall wear.

Colored Roller Skates

The latest item to which the vogue of color has spread is children's roller skates. The Samuel Winslow Skate Manufacturing Company, Worcester, Mass., is now offering a line of "Polychrome" roller skates, all of which are the company's standard ball-bearing numbers furnished with patented high-

speed rubber rolls. These skates are furnished in five colors, including fire red, perfect blue, emerald green, Spanish yellow and taxi yellow. Each pair is packed in an attractively labeled box, and 12 pair are packed in a strong corrugated paper carton.

Rubber News Around the World

LEYLAND AND BIRMINGHAM TO GIVE UP SOLID TIRES

The Leyland and Birmingham Rubber Company, English tire manufacturers, has decided to discontinue the making of solid tires after several years of production at a loss. The directors of the firm agreed to take this action, necessitating the clearance of all stock and considerable attendant expense, rather than to keep on manufacturing these tires without profit.

At the annual general meeting of the company this was given as one of the chief factors which cut down the year's trading profits. Robert T. Byrne, the chairman, gave the other reasons as the rubber market slump and the transfer of machinery involved in the erection of the firm's new mill. One new press has been installed capable of producing two tons of rubber tiling a day, and other improvements and additions have been made.

The turnover for the year was materially increased, and the profits at £81,204 were more than double those of last year. The dividend rate of 7½ per cent was maintained and is now being paid on £100,000 additional capital in ordinary shares.

DR. PAUL STAMBERGER TO DELIVER GOW LECTURES

The Gow lectures on "Colloid Chemistry and Its Relation to the Rubber Industry" will be given this year by Dr. Paul Stamberger of Budapest, at University College, London, England, on November 12, 14, 16, 19 and 21. At the first lecture the chair will be taken by William Duncan, chairman of the Rubber Growers' Association.

The last course of lectures was given by Dr. Ernst A. Hauser and was later published in book form by the Oxford University Press.

CHINESE WARM HANDS WITH WATER BOTTLES

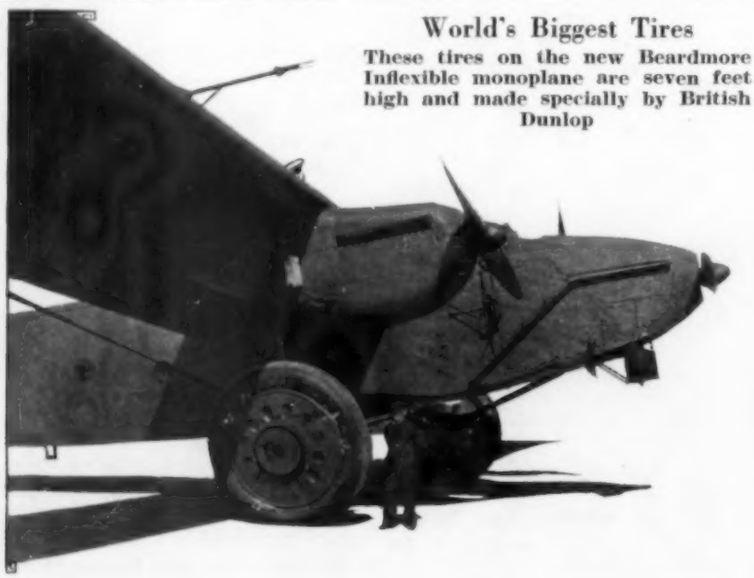
Hot water bottles have been increasing in popularity in the Shanghai district in recent years. The large sale among the Chinese in this market has been the result of a vogue set by the "Sing Song Girls," who during the cold weather use the small face bottles in their sleeves as hand warmers.

With the change of style of dress, which is now toward a half sleeve instead of the former long sleeve, the use of hot water bottles as hand warmers is not so convenient. Still, in cold weather it is not unusual to see many Chinese women walking on the principal streets with a small hot water bottle clasped in their hands for warmth.

ENGLISH RUBBER FIRMS CUT PRICES OF TIRES

Announcement has been made by the Dunlop Rubber Company, Ltd., of further reductions in tire prices ranging from 3s. 3d. to 8s. 9d. Other firms are expected to follow by making proportionate cuts in their prices. This action was not unexpected as A. Peake Jones, of the Avon Tire Company, announced on September 27 that there would be a general reduction in the price of automobile tires in October.

One leading manufacturer, Lionel Rapson, of the Rapson Tire Company, views the situation as dangerous for the industry. "The price war," he says, "is bad for the industry and for British shareholders. It means cuts before the industry is prepared for them. Overhead charges will have to be recast."



World's Biggest Tires

These tires on the new Beardmore Inflexible monoplane are seven feet high and made specially by British Dunlop

RUBBER TRADES SCHOOL BUILT FOR MANCHESTER

Under the joint auspices of three groups of British manufacturers, an appeal is being made for £2,000 with which to equip the new Manchester Rubber Trades School now under construction as a division of the Newton Heath Technical School. The organizations backing the campaign are the India-Rubber Manufacturers' Association, the Cable Makers' Association, and the Institution of the Rubber Industry.

When opened, the school will be open only to boys between the ages of 13 and 14, designated by manufacturers in the district. These youths may be selected arbitrarily from sons of employes or may be picked from a group to be chosen by the Juvenile Employment Bureau of the Manchester Education Authority. The boys who are chosen will be given a full two-year course, continuing their ordinary education and specializing in rubber technology.

After graduation, the youths may enter the plants of the companies which nominated them, at the same time continuing their course at the Junior Technical School one day a week for two years. Should a boy at the end of that time show sufficient promise, further courses will be available at the Municipal College of Technology which he will attend one day a week with the possibility of obtaining the Associateship of the college.

While several attempts had been previously made to provide educational facilities for the rubber trades in the Manchester district, it was not until June, 1926, that the idea of this Rubber Trades School was actually proposed. The plan was then suggested by the Institution of the Rubber Industry, and enough manufacturers were found to support it so that further steps could be taken.

Rubber Institution Meetings

At the Manchester and District section meeting of the Institution of the Rubber Industry on October 25, Dr. Paul Stamberger was scheduled to speak on "The Solvatation of Rubber and Rubber Compounds." Dr. D. M. Newitt will speak before the London section on November 5 on "The Attachment of Soft Rubber to Metal," and W. H. Nuthall, F. I. C., will read a paper on "Insulating Materials from the Chemical Standpoint" at the Glasgow meeting on November 7. The annual general meeting at Birmingham on November 8 will hear a talk by Dr. J. R. Scott on "The Swelling of Vulcanized Rubber in Liquids" and a paper by H. D. Elkington.

CATALPO!

Current Crude Rubber Items

PRICE LEVELS HIGHER ON RUBBER EXCHANGE

Trading in Rubber Futures Is Active in Beginning of the Fortnight But Tapers Off into Dullness in the Closing Days.

ALTHOUGH the average number of daily sales on the Rubber Exchange of New York, Inc., was approximately 50 contracts higher than during the preceding fortnight, the final days of the period witnessed dull and featureless sessions winding up with lack of interest on the part of all concerned. Price quotations, however, were consistently higher than during the latter part of September, the spot price rising to 18.90 and receding but slightly in the closing days.

A bullishly construed report from the Rubber Association showing consumption exceeding 39,000 tons during September, combined with firmer cables from London and Singapore and the general decline in stocks of crude rubber, served as an important factor in the improved feeling. There was fairly aggressive buying by commission houses and dealers, but advances were limited due to the profit taking on the bulges.

December contracts, which had commanded a premium at 19 cents early in the period, declined in later trading and closed 30 points lower. In the final day of the fortnight, October proved the only firm spot on the list, opening at 18.80 and closing only 10 points lower.

Activity in actual rubber was disappointingly small in the second week, the factories continuing out of the market. Despite the bullish construction generally placed on the Malayan stocks census at the end of September, there seemed to be no disposition to increase future commitments for the time, and an attitude of watchful waiting has been adopted by the trade in general. In fact, no material broadening in trade seems to be expected until the end of the month.

The table below indicates the daily fluctuations in prices on the Exchange and the daily volume of sales.

MALAYA PREPARES FOR END OF RESTRICTION

The Rubber Restriction Repeal Bill has been passed in Malaya, clearing the path for the removal of all restrictions on the export of rubber from British Malaya, including the Straits Settlements, on November 1, as announced by Premier Baldwin on April 4. Meanwhile, figures show that rubber exported from the Straits Settlements in the six months ended June 30 shows a decrease of 26,500 tons, or over 18 per cent as compared with the same period in 1927. Its value has decreased by $50,000,000 or 41 per cent.

In preparation for the anticipated traffic congestion, the Federated Malay States Railways have announced that after October 14 rubber delivered at any station for conveyance to port must have consignment note indorsed with name of steamer and documentary evidence from the ship's agents that space has been reserved.

BRITISH COMPANY PAYS 35 PER CENT DIVIDENDS

The directors of Harrisons & Crosfield, one of the most important British companies, have announced that a final dividend of 25 per cent is to be paid on the deferred ordinary shares, making a total of 35 per cent for the year. This is an indication that the firm has had a most satisfactory year despite its association with rubber planting. While less than the 1927 rate of 40 per cent, the present dividends are still the second highest since 1920.

The profits of this company are not entirely dependent upon its rubber plantations, as it carries on a general merchant business and is closely associated with the tea planting industry.

Plantation Dividends

The Singkap Para Plantations is paying an increased dividend, the rate for the year to June 30 last being 7½ per cent as against 5 per cent for the preceding period.

ERIC MILLER OPTIMISTIC ON RUBBER CONSUMPTION

At the annual meeting of Harrisons & Crosfield, Ltd., London, England, H. Eric Miller, chairman, declared that the world's consumption of crude rubber was proceeding at the rate of 650,000 tons a year. Consumption outside of the United States, he said, has increased from 30 per cent to 36 per cent of the total output. Mr. Miller estimates 75,000 tons as the maximum surplus which will be available for export after October 31 from the whole restriction area, including British-owned estates in the Dutch East Indies.

Part of this surplus will be needed to replenish dealers' stocks in the East, according to Mr. Miller, and a considerable portion will be sold for shipment in instalments over several months, reducing the surplus by 25,000 tons and resulting in an estimated surplus of 50,000 tons. This surplus, he believes, is not to be considered excessive, considering that both visible and invisible stocks were reduced by 80,000 tons between January 1 and October 31 of this year.

"The steadiness of the market," said Mr. Miller, "is evidence of the fundamentally sound condition of the industry. Rubber is undoubtedly cheap and when speculators decide to buy freely, manufacturers will find available stocks shrunk further."

Mr. Miller estimates consumption and production both around 700,000 tons in 1929, although the output of the Dutch Indies is uncertain.

JAPANESE TO ESTABLISH PLANTATIONS IN BRAZIL

Plans for the colonization and exploitation of a vast concession in the Amazon region were outlined to the governor of the state of Para, Brazil, on October 12 by Harahiro Fukuhara, representative of the Japanese South American Plantations Company. The Japanese company, which was organized in August, will operate through its subsidiary, the Companhia Agricola Colonial de Para, and it is estimated that its initial outlay will be about $5,000,000.

Fukuhara told the governor that the first immigrants from Japan will arrive next April to take up residence on the tract granted to the company. He said that they will be carefully chosen and will desire to become Brazilian citizens. They will devote particular attention to raising rubber, rice, tobacco and cocoa.

Closing Prices on Rubber Exchange of New York, Inc.

FROM OCTOBER 5 TO OCTOBER 20, 1928

		Spot	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Sales*
Oct.	5	18.60	18.50	18.70	18.80	18.50	18.60	18.60	18.70	18.90	18.80	18.80	18.90	18.90	356
	6	18.80	18.70	18.80	18.80	18.60	18.70	18.80	18.90	18.90	19.00	19.10	19.20	19.20	401
	8	18.40	18.30	18.40	18.50	18.40	18.40	18.40	18.50	18.60	18.70	18.70	18.70	18.80	302
	9	18.30	18.30	18.40	18.60	18.40	18.40	18.60	18.60	18.70	18.70	18.80	18.80	18.80	546
	10	18.50	18.40	18.60	18.60	18.50	18.60	18.60	18.70	18.70	18.80	18.80	18.90	18.90	297
	11	18.70	18.60	18.80	18.90	18.70	18.70	18.70	18.80	18.80	18.90	18.90	19.00	19.10	420
	15	18.90	18.80	18.90	19.00	18.80	18.90	18.90	19.20	19.20	19.20	19.20	19.20	19.20	397
	16	18.90	18.80	18.90	18.90	18.70	18.80	18.80	18.90	19.00	19.00	19.10	19.10	19.10	293
	17	18.90	18.80	18.80	18.90	18.80	18.80	18.80	18.90	18.90	19.00	19.00	19.10	19.10	304
	18	18.80	18.70	18.80	18.90	18.70	18.80	18.80	18.90	18.90	19.00	19.10	19.00	19.00	245
	19	18.70	18.60	18.70	18.80	18.70	18.80	18.80	18.90	18.90	19.00	19.00	19.10	19.10	115
	20	18.80	18.70	18.70	18.70	18.50	18.60	18.60	18.70	18.80	18.90	18.90	18.90	19.00	59

*In lots of 2½ tons each

CATALPO!

GOODRICH ANNOUNCES DE LUXE BALLOON TIRE

Third of the larger companies to manufacture a super-tire, the B. F. Goodrich Rubber Company has announced as the newest addition to its line the Silvertown De Luxe balloon tire. Several tread compounds were given exhaustive road and laboratory tests for more than a year before the tread for the new six-ply passenger tire went into production. The only distinguishing feature in the new tread design is a slight beveled projection of the familiar Silvertown button farther down the sidewall.

The new tire is larger in cross-section and outside diameter. According to Goodrich engineers, the cushioning of the rubber is heavier between the six plies of fabric, and the fabric is of high grade cotton thoroughly saturated and insulated with live rubber.

Goodyear in Smoke Conference

At a meeting September 24 in the office of G. Lloyd Weil, Mayor of Akron, the first conference was held with a view to securing relief from the coal dust said to come from the stacks of the Goodyear Tire & Rubber Company plants in East Akron. This is claimed to be a result of the installation of coal crushers and use of powdered coal under forced draft in the power plants.

The coal dust has inspired hundreds of protests from East Akron citizens and city officials are working together with Goodyear engineers to find a cure for the nuisance.

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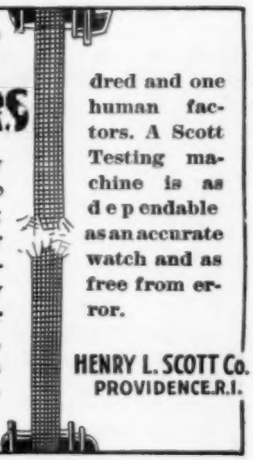
ANXIOUS TO PROGRESS! Man with years of experience in purchasing, stock control, production and office management of rubberized fabrics wishes to make new connection. Write Box 499, THE RUBBER AGE.



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LATE MARKET PRICES

Crude, Scrap & Reclaimed Rubber - Cottons and Fabrics

NEW YORK, OCTOBER 20, 1928

COTTON

FORECASTS by the Crop Reporting Bureau of the Department of Agriculture of a yield of only 13,993,000 bales caused a bombshell reaction when released on October 8. Quotations rose steadily, and by the close of the fortnight the spot price of middling upland cotton had crossed the 20-cent mark for the first time since early August.

Despite early skepticism, it is now the tendency to expect the final outturn to be even smaller than the government estimate. Heavy rains have lowered the grade of open cotton, and, according to weather reports, there is no top crop in Oklahoma and practically none in Texas.

At the end of September, domestic mill stocks were smaller than at any time in the past three years. According to the Association of Cotton Textile Merchants of New York, domestic sales of standard cotton cloths in September were 152.6 per cent of production and unfilled orders increased 37.7 per cent.

High, low and closing quotations as of October 20 were as follows:

	High Oct. 20	Low Oct. 20	Close Oct. 20	Close Oct. 4
October	19.80	19.70	19.78	18.99
December	19.60	19.46	19.58	18.95
January	19.57	19.43	19.54	18.92

Tire Fabrics

Announcements of curtailment of Akron production held the price of tire fabrics down somewhat toward the end of the period, though some mills have reported themselves sold to capacity to the close of the year and unable to take business before January.

CORD			
Peeler, carded, 28/5/3	lb.	.46½@	.47½
Peeler, carded, 28/4/3	lb.	.47½@	.48½
Peeler, carded, 18/3/3	lb.	.44½@	.45½
Peeler carded, 15/3/3	lb.	.44 @	.45
Egyptian, carded, 28/5/3	lb.	.52 @	.54
Egyptian, combed, 28/5/3	lb.	.58 @	.60
CHAFERS			
Carded, American, 8 oz.	lb.	.39 @	.41
Carded, American, 10 oz.	lb.	.40 @	.41
Carded, American, 12 oz.	lb.	.40 @	.43
Carded, American, 14 oz.	lb.	.38 @	.43
LENO BREAKER			
Carded American, 8¼ oz.	lb.	.39 @	.43
Carded American, 10¼ oz.	lb.	.39 @	.43
SQUARE WOVEN			
Carded American, 17¼ oz. 28-11 ply	lb.	.46 @	.46½
Carded American, 17¼ oz. 10-ply	lb.	.38 @	.40

Sheetings

Quotations on sheetings advanced in sympathy with the raw cotton market, but the amount of trading has been far from active. Toward the end of the period, however, factors noted a definite trend toward better conditions. Late prices were as follows:

40-inch, 2.50-yard	yd.	.12¾@	.13
40-inch, 2.85-yard	yd.	@	.11¼
40-inch, 3.15-yard	yd.	@	.12
40-inch, 3.60-yard	yd.	.09¾@	.09⅞
40-inch, 3.75-yard	yd.	.08⅝@	.08¾
40-inch, 4.25-yard	yd.	@	.07⅝

Ducks

The automobile trade has continued to cover on fair amounts of ducks, and rubberizing concerns have also covered moderately during the fortnight. Prices responded to the advance in cotton values during the last two weeks. Late prices follow:

Belting and Hose	lb.	@	.36
Enameling	lb.	.35 @	.37
Single filling	lb.	.15½@	.17
Double filling	lb.	.17½@	.18

RECLAIMED RUBBER

No apparent let-up in the demand for reclaimed rubber was evident during the past fortnight, and production is reported to be progressing without appreciable curtailment. The proportion of reclaimed rubber used during September to crude increased substantially over the figure for August due, however, to the drop in crude consumption rather than to any increase in the absorption of reclaimed. Prices have remained firm throughout the period and may be expected to continue so in view of the advance in the crude market. Latest quotations follow:

High Tensile			
Super-Reclaim No. 1 Black	lb.	.12½@	.13
Super-Reclaim No. 2 Black	lb.	.11½@	.11¾
High Tensile Red	lb.	.13¼@	.13½
Shoe			
Unwashed	lb.	.07¼@	.07½
Washed	lb.	.10 @	.10¼
Tube			
No. 1 (Floating)	lb.	.14½@	.15
No. 2 (Compounded)	lb.	.11 @	.11½
Tires			
Black, washed		.09½@	.10
Black, unwashed		.07½@	.07⅝
Black selected tires	lb.	.08 @	.08¼
Dark Gray	lb.	.09½@	.09⅝
Light Gray	lb.	.12 @	.12½
White	lb.	.13 @	.13½
Truck, Heavy Gravity	lb.	.07 @	.07¼
Truck, Light Gravity	lb.	.07¾@	.08
Miscellaneous			
Mechanical Blends	lb.	.06¾@	.07½
Red	lb.	.13 @	.13¼

Scrap Rubber

Firm conditions throughout the trade were reported at the annual autumnal conference of the Scrap Rubber Division of the National Association of Waste Material Dealers. The market continues steady with firm demand from reclaiming plants, and some factors in the trade are reported to be stocking up for coming months. Late prices are as follows:

(Prices to Consumer)

Auto tire peelings	ton	37.50	@39.00
Standard White auto	ton	50.00	@52.50
Mixed auto	ton	23.50	@25.00
Bicycle tires	ton	25.00	@27.50
Clean solid truck tires	ton	22.00	@24.00
Boots and shoes	lb.	.01⅝@	.01½
Arctics, trimmed	lb.	.00⅞@	01
Arctics, untrimmed	lb.	.00⅝@	.00⅞
Inner tubes, No. 1	lb.	.07 @	.07¼
Inner tubes, No. 2, compounded		.04¼@	.04½
Inner Tubes, Red	lb.	.05½@	.05⅝
Air Brake Hose	ton	35.00	@37.50
Rubber Hose	ton	18.00	@20.00

CRUDE RUBBER

WITH the end of British restriction only a month away, the figures for the census of Malayan stocks as of September 30 provided final confirmation of the belief that all reports of a tremendous surplus were highly overexaggerated. The total amount of rubber held on estates of 100 acres or over and in the hands of dealers was given as 70,711 tons. At the rate of increase shown since the end of June the total accumulations by the first of November will be less than 75,000 tons.

Not only are stocks in the United States and London at their lowest levels for the past two years, but the amount of rubber held at Singapore and Penang on September 30 declined to only 14,898 tons, the smallest figure since February, 1926. The combined effect of these factors was a decided firmness in the New York market, and the price of rubber crossed the 19-cent mark for the first time since August.

With tire factory curtailment of about 15 per cent reported at the end of the period, there was little buying and very dull trading. It is still expected, however, that American consumption of rubber in 1928 will reach a total of about 425,000 tons with the rest of the world showing consistent gains, and that, while there will be no actual shortage of rubber next year, the decline in stocks will be sufficient to bring the price to higher levels.

The crepes and other off-grades held their own with the standard ribbed sheets in the price gains made during the period.

Prices on the New York outside market on October 20 were as follows:

Plantations—			
Ribbed Smoked Sheets—			
Spot-Mar.	.18¾@		.19
Apr. June	.18⅞@		.19⅛
First Latex, crepe spot	.19½@		.19¾
Amber Crepe, No. 2	.18½@		.18¾
Amber Crepe, No. 3	.18¼@		.18½
Amber Crepe, No. 4	.18 @		.18¼
Brown Crepe, Rolled	.16¾@		.17
Brown Crepe, Clean, thin	.18⅝@		.18½
Brown Crepe, specky	.18 @		.18¼
Liquid Latex, per gal.	1.00 @		1.20
Paras—			
Up-river Fine	@		.20½
Up-river Medium	Nominal		
Up-river Coarse	@		.14
Acre Bolivian, fine	@		.21½
Caucho Ball, Upper	@		.13
Islands, fine	Nominal		
Centrals—			
Central, scrap	.14 @		.14½
Esmeraldas	.14 @		.14½
Balata—			
Block, Colombia	Nominal		
Block, Cuidad	@		.43

LONDON MARKET

Standard Ribbed Smoked Sheets—Buyers			
Spot-Oct.	8⅞@		9d
Nov.-Dec.	8⅞@		9d
Jan.-Mar.	9 @		9⅛d

SINGAPORE MARKET

Standard Ribbed Smoked Sheets—Sellers			
Spot	8⅝@		8½d

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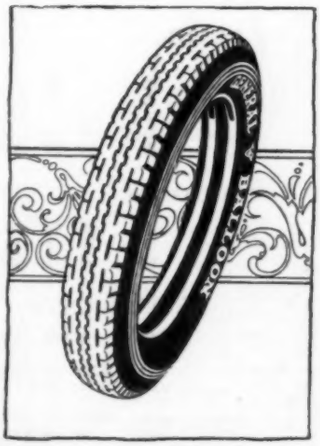

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BUILT IN AKRON, OHIO, BY THE GENERAL TIRE AND RUBBER CO.

LATE RUBBER CHEMICAL PRICES

Accelerators — Colors — Softeners — Compounding Materials

NEW YORK, OCTOBER 20, 1928

CONTINUED capacity production in the plants manufacturing different types of rubber goods acted as a stimulus to makers of rubber chemicals and compounding materials to step up their own output. Reports of slackening up in production in various rubber factories at Akron were apparently given little credence by the majority of chemical ingredient producers, for there has been little effort to curtail the present high rate of output in this field. Whether this current volume will be continued to the end of the year is a question that it would seem the manufacturers themselves have not settled upon as yet. Widespread predictions that 1929 will be an even greater year for the rubber industry have obviously had their effect on producers of rubber chemicals.

Prices remain steady on the whole with the tendency being upward. Zinc stearate made a slight advance.

ACCELERATORS

Organic			
A-7	lb.	.55 @	.59
A-11	lb.	.62 @	.66
A-16	lb.	.57 @	.61
A-19	lb.	.58 @	.62
A-20	lb.	.64 @	.68
Aero-X	lb.	.75 @	—
Aldehyde ammonia, crystals	lb.	.65 @	.70
Aniline oil, drums, f.o.b. works	lb.	.15 @	.16¼
Crylene	lb.	.55 @	.65
paste	lb.	.45 @	.55
Di-Ortho-Tolyiguanidine	lb.	.45 @	.50½
Diphenyiguanidine	lb.	.40 @	.42½
Ethylidene aniline	lb.	.45 @	.47½
Formaldehyde Aniline, 140° m. p.	lb.	.32 @	.34½
Formaldehyde Aniline, 60° m. p.	lb.	.30 @	.32½
Grasselerator 102	lb.	.58½@	.61
Grasselerator 552	lb.	— @	4.45
Grasselerator 808	lb.	.79 @	.85
Grasselerator 833	lb.	1.17 @	1.30
Heptene	lb.	.40 @	—
Hexamethylene-tetramine	lb.	.57½@	.60
Lithex	lb.	.18 @	.20
Methylenedianilide	lb.	.36 @	.37
Monex	lb.	3.25 @	—
Oynone	lb.	.68 @	.80
Para-Nitrosodimethylaniline, f.o.b. works	lb.	.92 @	.96
Piperidine-Piperidyldithio-Carbamate	lb.	4.45 @	4.60
R & H 40	lb.	.40 @	.42½
R & H 50	lb.	.40 @	.42½
R & H 397	lb.	.75 @	.77½
Safex	lb.	1.20 @	1.25
Tensilac, No. 39	lb.	.50 @	.52½
Tensilac, No. 41	lb.	.50 @	.52½
Thermio F	lb.	.50 @	.55
Thiocarbanilide, drums	lb.	.25½@	.26½
Thionex	lb.	3.25 @	—
Trimene	lb.	.75 @	—
base	lb.	1.20 @	—
Triphenylguanidine	lb.	.65 @	.70
Vulcanex	lb.	.68 @	—
Vulcone	lb.	.68 @	—
Vulcanol	lb.	1.03 @	1.08
Waxene	lb.	.30 @	.32
Z 88	lb.	.65 @	.69
Inorganic			
Lead, sublimed blue	lb.	.08¼@	.08¾
Lead, white	lb.	.10¼@	.12½
Litharge, domestic	lb.	.09½@	.12
Magnesia, calcined, light	per 100 lb.	5.35 @	5.45
heavy	per 100 lb.	3.65 @	3.75

COLORS

Blacks (See Compounding Materials)			
Blues			
Prussian	lb.	.33 @	.35
Ultramarine	lb.	.06 @	.30
Browns			
Sienna, Italian	lb.	.05 @	.12½
Umber, Turkey	lb.	.04½@	.07
Greens			
Chrome, light	lb.	.27 @	.31
medium	lb.	.29 @	.32
dark	lb.	.31 @	.34
Chromium Oxide, bbl.	lb.	.34 @	.36
Reds			
Antimony			
crimson, 15/17	lb.	.44 @	.50
sulphur free	lb.	.50 @	.55
golden 15/17 F.S.	lb.	.18 @	.22
Indian English	lb.	.08 @	.12
Domestic (Maroon)	lb.	.08 @	.12
Oximony	lb.	.13¼@	—
Red oxide, pure	lb.	.10 @	.12
Venetian red	lb.	.03 @	.06
Vermillion, quicksilver, English	lb.	1.85 @	1.95
Whites			
Lithophone, Akcolith	lb.	.05 3/5@	.06
Lithophone, Azolith	lb.	.05¼@	.05¾
Lithopone, Vanolith	lb.	.05¾@	—
Titanox	lb.	.10 @	.10½
Cal. Base Pigment	lb.	.10 @	.10½
Zinx Oxide—American Process			
American Azo:			
ZZZ (lead free)	lb.	.06½@	.07
ZZ (leaded)	lb.	.06⅞@	.07⅛
Zinc Oxide—French Process			
White seal	lb.	.11⅞@	—
Green seal	lb.	.10⅞@	—
Red Seal		.09⅞@	—
Yellows			
Chrome	lb.	.15½@	.16½
Ocher, French medium	lb.	.03½@	.06
domestic	lb.	.01⅝@	.02

COMPOUNDING MATERIALS

Aluminum Flake	ton	21.85 @	24.50
Ammonia carbonate	lb.	.10½@	.12
Asbestine	ton	14.75 @	18.00
Barium carbonate	lb.	.03½@	.05
Barium Dust	lb.	.05 @	.06
Barytes southern off-color,	ton	12.00 @	18.00
Western prime white	ton	23.00 @	—
imported	ton	27.00 @	36.00
Basofor	lb.	.04½@	—
Blacks			
Arrow "Aerfloted"	lb.	.08½@	.12½
Bone Black	lb.	.05½@	.11
Carbon, compressed	lb.	.08 @	.12
Carbon, uncompressed	lb.	.07½@	.11½
Drop Black	lb.	.06 @	.10
Fumonex	lb.	.06 @	.09
Gastex	lb.	.05¼@	.05½
Lamp Black	lb.	.12 @	.40
Micronex	lb.	.08½@	.12½
Velvetex carbon	lb.	.04½@	.06
Blanc fixe dry f.o.b. works	lb.	.03½@	.03⅝
Carrara filler	lb.	.01¾@	.02
Catalpo (fact.)	lb.	.02 @	—
Chalk	ton	12.00 @	14.00
Clay, China, domestic	ton	8.00 @	9.00
Aerfloted Suprex	ton	10.00 @	22.00
Congaree, c. l. f.o.b. mine	ton	9.00 @	—
Mineral Flour, c. l. fob mine	ton	20.00 @	23.00
Tensulite		15.00 @	—
Glues, extra white	lb.	.22 @	.26
medium white	lb.	.20 @	.24
Magnesia, carbonate	lb.	.08¾@	.11
Mica, powdered	ton	65.00 @	80.00
Rotten Stone (powdered)	lb.	.02½@	.04½
Soapstone, powdered	ton	15.00 @	22.00
Starch, powdered	cwt.	3.30 @	3.70
Talc, domestic	ton	12.00 @	15.00
Velvetex	lb.	.04 @	.07
Whiting, commercial	cwt.	.85 @	1.00
English cliffstone	cwt.	1.50 @	—
Superfine	ton	10.00 @	12.00
Witco	ton	12.00 @	—
Wood pulp XXX	ton	45.00 @	—
Wood pulp X	ton	25.00 @	—
Zinc Carbonate	lb.	.09½@	.10½
Zinc Stearate	lb.	.20 @	.21

MINERAL RUBBER

Genasco (factory)	ton	50.00 @	52.00
Montezuma, solid	ton	28.00 @	36.00
Montezuma, granulated	ton	32.00 @	42.00
Paradura	ton	62.50 @	65.00
Pioneer, MR, solid	ton	42.00 @	45.00
Pioneer-granulated	ton	52.00 @	55.00
R & H Hydro-Carbon	ton	27.05 @	29.00
Robertson, MR, solid	ton	34.00 @	80.00
M.R. (gran)	ton	38.00 @	80.00

SOFTENERS

Acids			
Nitric, 36 degrees	cwt.	5.00 @	5.25
Sulphuric, 60 degrees	ton	10.50 @	11.50
66 degrees	ton	15.00 @	16.00
Tartaric, crystals	lb.	.35 @	.36
Acids, Fatty			
Stearex	lb.	.15 @	.20
Stearic, double pressed	lb.	.18 @	.22
Alkalies			
Caustic soda, 76%	cwt.	3.76 @	3.91
Soda ash, 58% C.L.	cwt.	1.40 @	
Oils			
Corn, refined, bbls.	lb.	.11 @	.11½
Cottonseed, crude		.08½@	.08¾
Cycline	gal.	.27 @	.34
Degras (c.l. 100 bbls.)	lb.	.03¾@	—
Less c. l. (10-25 bbls.)	lb.	.04 @	—
Lots less than 10 bbls.	lb.	.04⅛@	.04½
Fluxrite	lb.	.05 @	.06
Hexalin	lb.	.60 @	—
Acetate	lb.	.70 @	—
Linseed, Raw C.L. bbl.	lb.	.09½@	.10
Palm Lagos	lb.	.07¼@	.07½
Niger	lb.	.07⅝@	.08
Vansulol	lb.	.10½@	—
Para-Flux	gal.	.17 @	—
Peanut, domestic, crude	lb.	.12 @	.12¼
Petrolatum, white	lb.	.08 @	.08½
dark amber	lb.	.03⅝@	.03¾
Pine, steam distilled	gal.	.65 @	.70
Rapeseed, refined	gal.	1.04 @	1.06
second rectified	gal.	.58 @	—
Resins and Pitches			
Pitch, Burgundy	lb.	.06½@	.07½
coal tar	gal.	.05½@	.06
pine, 200 lb. gr. wt.	bbl.	9.00 @	10.00
Rosin, grade K, 280 lb.	bbl.	8.55 @	—
Pigmentar	gal.	.33 @	.41
Tar Retort, 50 gal.	bbl.	12.50 @	18.00
Solvents			
Acetone, pure	lb.	.13 @	
Alcohol denatured, No. 1 bbls.	gal.	.37½@	.44½
Benzol, 90%	gal.	.28 @	—
Carbon bisulphide	lb.	.05½@	.06¼
Carbon tetrachloride	lb.	.06¼@	.07
Motor gasoline, steel bbls.	gal.	.17 @	—
Naptha, solvent	gal.	.35 @	.40
Turpentine, spirits	gal.	.60 @	.64
wood	gal.	.50 @	.54
Waxes			
Beeswax	lb.	.56 @	.58
Carnauba	lb.	@	.50
Ceresin, white	lb.	.10 @	.11
Montan, crude	lb.	.07 @	.07½
Ozokerite, black	lb.	.24 @	.25
green	lb.	.28 @	.30
Miscellaneous			
RSL Mold Solution	gal.	.75 @	1.00

ANTI-OXIDANTS

Antox	lb.	.79 @	.83
Neozone	lb.	.74 @	—
Oxynone	lb.	.68 @	.80
Resistox	lb.	.54 @	.57
Stabilite	lb.	.65 @	—
VGB	lb.	.55 @	.66

SUBSTITUTES

Black	lb.	.08 @	.14
White	lb.	.10 @	.16
Brown	lb.	.08 @	.15

VULCANIZING INGREDIENTS

Sulphur Chloride (drums)	lb.	.03¼@	.03½
Sulphur flour,			
Superfine bags	cwt.	2.20 @	2.30
Superfine, bbls.	cwt.	2.55 @	3.10
100% pure, refined,			
bags	cwt.	2.60 @	3.15
bbls.	cwt.	2.95 @	3.50

TIRES & TUBES
CRUDE RUBBER

STATISTICAL SECTION

AUTOMOBILES
GASOLINE

CONTINUED high production in American tire and rubber manufacturing establishments still remains the real feature of the industry. Although not coming up to the record breaking consumption of August, the amount of rubber used in this country during September at 39,882 tons made that the second greatest month in the industry's history. Only an average consumption of 31,000 tons for each of the last three months of the year is necessary in order to bring the total amount of rubber absorbed here in 1928 up to 425,000 tons, and it would appear that this estimated mark may easily be passed.

High September imports kept the stock of rubber in the United States practically the same as at the end of August, but stocks in London and in Singapore and Penang declined appreciably with the accumulations on Malayan estates showing only a slight gain.

Production of automobiles fell off somewhat from the peak output of August, but September was still the third highest month of the year in this regard. It is expected that there will be the customary seasonal declines in production in car factories and in tire establishments during the remainder of the year, but there is no doubt that 1928 will set new record marks for both industries.

Latest figures covering imports and exports from the leading consuming and producing markets have been added to the appropriate tables in this section.

PLAN OF THE SECTION

The statistics included in this section have been chosen for their constant importance to the rubber industry. The tables are reprinted in the same relative position in every issue, each table being kept current by the addition of new figures as soon as they become available. The section accordingly affords the most up-to-date, complete and convenient statistical service in the industry.

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U. S. Imports and Exports of Crude Rubber

	Gross Imports			Re-exports			Net Imports
YEARS	Long Tons	Total Declared Value	Average Declared Value per pound Cents	Long Tons	Total Declared Value	Average Declared Value per pound Cents	Long Tons
1921	185,394	73,772,677	17.76	5,716	2,414,924	18.86	179,678
1922	301,076	101,843,188	15.10	4,809	1,921,828	17.84	296,267
1923	309,144	185,060,304	26.72	8,772	5,672,319	28.87	300,372
1924	328,056	174,231,331	23.71	10,309	6,057,637	26.23	317,747
1925	396,642	429,705,014	48.36	14,827	19,847,753	59.76	381,815
1926	413,338	505,817,807	54.63	17,671	22,470,583	56.77	395,667
1927	426,258	339,874,774	35.60	27,775	24,735,488	39.76	398,483
1926:							
Jan.	42,404	72,528,151	76.36	2,059	3,747,505	81.24	40,345
Feb.	32,865	58,738,370	79.78	1,430	2,280,168	71.17	31,435
Mar.	42,152	70,589,581	74.76	1,836	2,735,234	66.51	40,316
Apr.	34,544	48,742,539	62.99	1,128	1,605,093	63.58	33,416
May	29,756	36,896,080	55.35	1,052	1,558,987	66.17	28,704
June	24,900	34,498,561	61.85	1,105	1,371,217	55.41	23,795
July	35,820	33,061,281	41.20	1,554	1,743,854	50.09	34,266
Aug.	27,400	24,670,752	40.21	1,318	1,339,563	45.38	26,082
Sept.	37,112	32,625,032	39.25	1,437	1,519,870	47.20	35,675
Oct.	29,746	25,320,558	38.49	1,366	1,316,270	43.03	28,110
Nov.	39,155	34,890,536	39.78	1,482	1,411,517	42.51	37,673
Dec.	37,754	33,261,366	39.33	1,904	1,841,305	45.16	35,850
1927:							
Jan.	43,340	36,753,719	37.86	1,525	1,444,734	42.28	41,815
Feb.	28,337	23,110,257	36.41	2,451	2,277,297	41.47	25,886
Mar.	35,515	28,693,016	36.07	2,763	3,249,665	52.50	32,752
Apr.	46,202	37,321,505	36.06	1,575	1,428,425	40.48	44,627
May	36,518	30,984,377	37.88	2,782	2,501,562	40.14	33,736
June	33,045	27,850,014	37.62	1,775	1,550,592	39.00	31,270
July	37,677	31,678,259	37.53	1,958	1,560,853	35.59	35,719
Aug.	32,810	26,396,931	35.92	1,809	1,382,768	34.12	31,001
Sept.	33,301	25,314,412	33.94	3,500	3,036,929	38.74	29,801
Oct.	30,184	22,163,282	32.78	2,513	2,042,713	36.29	27,671
Nov.	38,592	27,395,428	31.69	2,469	2,014,196	36.43	36,123
Dec.	30,737	22,213,574	32.26	2,655	2,245,754	37.77	28,082
1928:							
Jan.	39,108	30,278,444	34.56	1,988	1,734,990	38.95	37,120
Feb.	33,664	27,763,655	36.82	2,738	2,229,589	36.35	30,926
Mar.	40,688	32,109,376	35.23	3,718	2,587,434	31.07	36,950
Apr.	37,958	27,296,346	32.23	2,272	1,415,024	27.80	35,686
May	31,058	19,058,672	27.80	2,399	1,386,307	25.80	28,659
June	27,764	14,121,219	22.71	2,621	1,400,697	23.86	25,143
July	27,129	11,581,969	19.06	3,087	1,451,446	20.99	24,042
Aug.	30,600	12,599,576	18.39	2,377	1,084,646	20.37	28,223
Sept.*	37,443	15,634,405	18.64				
Oct.							
Nov.							
Dec.							

*Official estimates based on arrivals at New York and Boston.

U. S. Consumption of Crude Rubber

(Rubber Association of America statistics raised to 100 per cent—All figures in long tons)

Figures on Monthly Basis

	1921	1922	1923	1924	1925	1926	1927	1928
Jan.	5,045	16,938	30,106	29,058	29,638	32,196	31,518	34,403
Feb.	5,955	14,767	30,149	25,736	29,761	31,136	30,137	33,702
Mar.	9,190	21,408	36,629	28,385	33,498	32,936	36,141	35,688
Apr.	13,084	19,294	29,085	27,129	34,139	32,696	35,871	32,772
May	16,023	23,246	36,155	25,845	35,322	29,364	34,592	37,333
June	16,142	31,713	24,272	22,753	35,822	28,598	33,801	37,676
July	18,310	24,522	17,685	23,396	36,053	27,577	29,219	37,497
Aug.	23,649	29,631	20,359	28,982	35,909	34,533	33,460	42,927
Sept.	16,705	24,410	17,594	31,497	31,691	32,904	27,214	39,882
Oct.	16,814	26,881	21,321	31,520	29,047	29,836	26,790	
Nov.	14,105	24,950	20,437	27,289	25,853	28,080	26,792	
Dec.	15,482	25,070	21,902	27,199	28,748	26,293	25,492	
Totals	170,504	282,560	305,694	328,769	388,481	366,149	371,027	

Figures on Quarterly Basis

Quarter	1921	1922	1923	1924	1925	1926	1927	1928
Jan./Mar.			96,776	87,609	95,263	94,301	99,216	103,558
Apr./June	65,463	127,360	89,493	75,674	104,099	87,109	103,242	103,500
July/Sept.			55,621	83,813	99,493	93,793	89,210	
Oct./Dec.	105,962	155,067	63,617	92,656	85,789	83,212	80,860	
Totals	171,425	282,427	305,507	339,752	384,644	358,415	372,528	207,058

Note—The Rubber Association estimates its monthly rubber consumption figures to be 90 per cent complete. Up until 1925 the quarterly figures were likewise estimated to be 90 per cent complete; beginning with 1925 an estimate of 92 per cent completeness has been used. These estimates have been used in raising the figures in this table to 100 per cent. The quarterly figures are generally regarded as the most authentic; the monthly figures may be accepted as preliminary.

Rubber Invoiced to the U. S.

(Reported by American Consuls—Quantities in Long Tons)

During the Week Ended	From Br. Malaya	From Ceylon	From Dutch East Indies	From London & Liverpool	Total
Aug. 11	4,916	740	2,373	916	8,945
Aug. 18	6,416	776	1,813	944	9,949
Aug. 25	6,932	946	2,340	453	10,671
Sept. 1	5,501	979	1,238	835	8,553
Sept. 8	5,105	226	2,254	295	7,880
Sept. 15	5,086	1,562	1,342	734	8,724
Sept. 22	5,553	709	1,892	505	8,659
Sept. 29	4,402	979	2,034	1,498	8,913
Oct. 6	4,262	756	2,108	1,672	8,798
Oct. 13	3,751	1,017	1,303	1,754	7,825

Daily Spot Closing Prices of Ribbed Smoked Sheet Rubber—*New York Market, in Cents per Pound*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Ave.
1926																																
January		—	—	87	87¼	85½	86½	87½	—	—	88½	88¾	88¼	85½	84½	82½	—	75½	75½	75	75	72	72½	—	68	68½	67	—	70½	—	—	79⅛
February		67	67½	66¼	66¾	68	—	69	67	65	66	66	65½	63	63	60½	61	60	59	60	61	56	55	55	52	51¾	51	69	—	—	62¾
March		55	58	53	53½	57½	—	56	55½	61	60	63	61½	62	62	60⅜	62	—	47½	48½	48	49	48	48½	48	59⅞	60	—	59½	58½	—	59
April		59	—	59	58	56½	56½	56½	53	53	49½	42	50½	48½	—	48	47	47½	47½	47½	48	48	48	48	48	48	48	48	49	48½	—	51¼
May		48½	—	50	50¾	49½	49¾	49	49	49	49½	42	—	49¼	47½	47⅝	—	47	47½	47½	47¾	46¾	44	43½	43½	46	45	45	43	42	—	47⅜
June		41½	—	42	41¾	42	41¾	41¾	41½	43	41¾	42	43	42	43½	—	43	43	43	43	43	43	43	43½	43½	45	45	42	42	42	—	42½
July		42	—	42	42	38½	41¾	41½	41½	41½	41	41	41	41	41	40	40	40	40	40	40	40	40	41½	41½	41½	41½	41½	41½	39¾	39½	41¼
August		42	—	42	38½	38¾	37	38¾	38¾	38¾	37½	37½	37½	38½	40¼	40¼	40½	41½	41½	41½	41½	41½	41½	41½	41½	41½	39	39	41½	39¾	39½	40
September		40¼	40¼	40¼	—	43¼	43¾	40¼	40¾	40¾	—	—	42½	42¾	40¾	43	43½	40½	39¾	39¾	39¾	39¾	39¾	39¾	42¼	42½	42½	42½	42¾	42¾	42½	41
October		43	—	41	41¼	41½	42¾	42½	—	41¾	41½	41¼	41¼	40¾	40¾	40¾	42½	42½	42¾	42¾	42¾	42¾	42¾	42¾	42¾	42¾	42½	42½	42¾	42½	—	42½
November		41¼	—	41	41¼	41½	41¾	41½	41¾	42¾	41¾	41¼	41¼	41¼	40¾	40¾	40½	39½	39¾	38¾	38¾	38¾	38¾	38¾	38	38	37¾	37¾	37	37	—	42½
December		36¾	37½	37½	37½	—	37	37¾	37	37	37½	37½	—	37½	37¾	38	38	38	38	38¾	38¾	38¾	38¾	38¾	38	38½	39	39	38½	38½	38½	38¾
1927																																
January		—	37½	37¾	39¼	39	40¾	37½	—	40½	40¾	40¾	39¾	39¾	39¾	—	39¾	38¾	39	38½	40¼	40¼	40¼	40¼	40¼	40¼	39¾	39¾	39¼	39	38¾	38¾
February		37½	37¾	37½	37½	39¾	—	37¾	38	40¾	37¾	37¾	38¼	38¾	38¾	38	38¾	38¾	38¾	38¾	38¾	38¾	38¾	38¾	38¾	38¾	38¾	38¾	38¾	38¾	38¾	38¾
March		39¾	39¾	40	40¾	41	40¾	40¾	40¾	41¾	41¾	41¾	41¾	41¾	41¾	41¾	41¾	41¾	41¾	41¾	41¾	41¾	41¾	41¾	41¾	41¾	41¾	41¾	41¾	41¾	41½	41¾
April		41¼	41¼	41	41	41¼	41¼	41¼	41¼	41	41¼	41	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾
May		40	40¼	40¼	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾
June		41	41	41	41	39¾	39¾	39¾	38¾	38¾	38¾	38¾	38¾	38¾	38¾	38¾	38¾	38¾	38¾	38¾	38¾	38¾	38¾	38¾	38¾	38¾	38¾	38¾	38¾	38¾	38¾	38¾
July		35½	—	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½
August		35½	—	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½
Sept.		34	—	33½	33½	33½	33½	33½	33½	33½	34½	34½	34½	34½	34½	34½	34½	34½	34½	34½	34½	34½	34½	34½	34½	34½	34½	34½	34½	34½	34½	34½
Oct.		33¾	—	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½
Nov.		35	35¼	35¼	35¾	35¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾
Dec.		40½	40¼	40¼	40¾	40¾	—	40½	40	40½	40½	—	40¼	40½	—	40½	40½	40½	40½	40½	40½	40½	40½	40½	40½	40½	40½	40½	40½	40½	40½	40½
1928																																
January		—	—	41¾	41¾	41	41	—	—	—	40½	40%	40%	40%	40%	40%	40%	40%	40%	40%	40¼	40¼	40¼	40¼	40¼	39¾	39¾	39¼	39	38¾	38¾	40¼
February		37½	37¾	37¾	38¼	38¼	38¼	38¼	38¼	38¼	38¼	38¼	38¼	38¼	38¼	38¼	38¼	38¼	38¼	38¼	38¼	38¼	38¼	38¼	38¼	38¼	38¼	38¼	38¼	38¼	38¼	38¼
March		39¾	39¾	40	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼
April		41¼	41¼	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41
May		40	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼
June		35½	—	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½
July		35½	—	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½
August		34	—	33½	33½	33½	33½	33½	33½	33½	34½	34½	34½	34½	34½	34½	34½	34½	34½	34½	34½	34½	34½	34½	34½	34½	34½	34½	34½	34½	34½	34½
Sept.		33¾	—	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½
Oct.		33¾	—	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½
Nov.		35	35¼	35¼	35¾	35¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾
Dec.		40½	40¼	40¼	40¾	40¾	—	40½	40	40½	40½	—	40¼	40½	—	40½	40½	40½	40½	40½	40½	40½	40½	40½	40½	40½	40½	40½	40½	40½	40½	40½

Average Spot Closing Prices—Ribbed Smoked Sheets

(New York Market)

Average Price per Pound for Years 1910-1921

Year	Cents	Year	Cents	Year	Cents
1910	206.60	1914	65.33	1918	60.15
1911	141.30	1915	65.85	1919	48.70
1912	121.60	1916	72.50	1920	36.30
1913	82.04	1917	72.23	1921	16.36

Average Monthly Price per Pound Since 1922

Months	1922 Cents	1923 Cents	1924 Cents	1925 Cents	1926 Cents	1927 Cents	1928 Cents
Jan.	18.82	32.73	25.86	36.71	79.50	38.75	40.25
Feb.	16.12	35.14	25.29	36.01	62.25	38.25	32.75
Mar.	14.53	34.21	22.83	41.00	59.00	41.04	26.82
Apr.	15.99	32.48	22.51	43.64	51.25	40.86	18.97
May	15.25	27.39	18.89	58.47	47.75	40.76	18.99
June	15.11	26.88	18.81	77.26	42.50	37.25	19.59
July	14.67	26.10	22.16	103.16	41.03	23.44	19.40
Aug.	13.93	28.84	26.17	82.99	38.50	35.12	19.46
Sept.	14.44	28.95	27.56	88.88	41.00	33.67	18.47
Oct.	19.78	26.93	31.13	98.01	42.50	34.32	
Nov.	23.88	27.14	34.33	104.80	38.50	37.58	
Dec.	27.42	26.60	37.88	98.51	38.25	40.63	
Average for Year	17.50	29.45	26.20	72.46	48.50	37.72	

London Closing Prices of Ribbed Smoked Sheet

(In Pence Per Pound)

Sixth Restriction Year—Third Quarter

Day	Aug.	Sept.	Oct.	Day	Aug.	Sept.	Oct.
1	9⅜	—	8½	17	9½	8⅜	8⅞
2	9⅜	—	8⅜	18	9½	8½	9
3	9½	9	8½	19	—	8⅜	8⅞
4	—	8⅞	8½	20	9⅜	8⅜	8⅞
5	—	8⅞	8¾	21	9¼	8⅜	—
6	—	8⅜	8⅞	22	9¼	8⅜	—
7	9½	8⅜	—	23	9¼	—	—
8	9½	8⅜	8¾	24	9¼	8⅜	—
9	9½	—	8¾	25	9⅛	8½	—
10	9½	8⅜	8¾	26	—	8⅝	—
11	9½	8⅜	8⅞	27	9	8½	—
12	—	8½	9	28	9	8½	—
13	9½	8⅝	—	29	9	8½	—
14	9½	8⅝	—	30	9	—	—
15	9⅜	8½	9	31	9	—	—
16	9½	—	8⅞				

The average price for the period for which the daily prices are reported above is approximately 8.901 pence. All restrictions on rubber exports from British Malaya and Ceylon will officially cease on October 31.

Average Price in Previous Quarters

Quarter	1922-23	1923-24	1924-25	1925-26	1926-27	1927-28
Nov.-Jan.	14.285	14.175	17.9983	46.709	19.265	19.023
Feb.-Apr.	16.858	12.917	19.356	28.103	19.696	12.591
May-July	14.242	10.947	38.469	21.001	18.165	9.154
Aug.-Oct.	14.944	14.632	43.269	20.199	16.620	

Spot Closing Cotton Prices

(Middling Upland Grade—New York Market)

Recent Daily Price Per Pound

Day of Month	Sept.	Oct.	Day of Month	Sept.	Oct.	Day of Month	Sept.	Oct.
1	——	19.45	11	18.25	19.55	21	18.45	——
2	——	19.45	12	18.30	——	22	18.90	——
3	——	19.35	13	17.80	19.40	23	——	——
4	19.05	19.25	14	17.80	——	24	19.05	——
5	19.25	19.10	15	17.80	19.55	25	18.90	——
6	19.35	19.05	16	——	19.80	26	19.15	——
7	19.40	——	17	17.90	20.20	27	19.60	——
8	19.40	19.45	18	17.65	20.10	28	19.30	——
9	——	19.25	19	17.95	20.05	29	19.30	——
10	18.50	19.25	20	17.90	20.05	30	——	——
						31	——	——

Average Monthly Price Per Pound

Month	1926 Cents	1927 Cents	1928 Cents	Month	1926 Cents	1927 Cents	1928 Cents
Jan.	20.85	13.42	19.12	Aug.	18.57	20.04	19.28
Feb.	20.60	14.10	18.40	Sept.	17.02	21.95	18.67
Mar.	19.35	14.32	19.38	Oct.	13.14	20.55	
Apr.	19.13	14.75	20.63	Nov.	12.86	20.22	
May	18.92	16.07	21.58	Dec.	12.68	19.58	
June	18.57	16.85	21.50	Average for Year	17.53	17.49	
July	18.71	18.00	21.36				

Stock of Crude Rubber in the U. S.

(All Quantities in Long Tons)

At	ON HAND			AFLOAT			ON HAND AND AFLOAT		
End of	1926	1927	1928	1926	1927	1928	1926	1927	1928
Jan.	55,198	76,172	110,244	46,296	45,312	41,256	100,434	121,484	151,500
Feb.	58,035	91,186	108,955	46,935	42,166	43,316	104,970	133,352	152,271
March	61,822	85,740	114,061	43,567	49,600	39,324	105,389	135,340	153,385
April	55,261	92,757	113,083	41,905	38,963	33,986	97,166	131,720	147,069
May	64,360	94,563	105,356	40,303	44,181	34,374	104,663	138,744	139,730
June	60,460	89,250	90,198	40,907	47,233	40,001	101,367	136,483	130,119
July	64,900	98,469	83,242	38,062	40,587	42,304	102,962	139,056	125,546
Aug.	60,870	96,148	68,994	37,360	40,937	51,875	98,230	137,085	120,869
Sept.	62,078	97,829	68,851	42,464	37,966	48,566	105,542	135,793	117,417
Oct.	64,089	97,452		52,930	42,804		117,919	140,256	
Nov.	69,385	101,084		47,311	37,076		116,696	138,110	
Dec.	72,520	100,130		52,020	47,938		124,540	148,068	

(Rubber Association of America figures raised to 100%.)

Stock of Crude Rubber in London

(No. of tons in Wharves and Warehouses, including Latex)

At end of:	1920	1921	1922	1923	1924	1925	1926	1927	1928
Jan.	19,300	56,573	67,252	73,498	57,460	27,172	9,994	54,994	66,524
Feb.	18,329	59,439	67,623	70,483	56,732	23,425	10,004	58,826	62,964
Mar.	18,969	63,913	66,670	63,438	55,647	18,104	13,127	63,055	58,272
Apr.	20,072	68,759	68,637	58,770	54,559	12,949	18,773	66,897	53,425
May	20,921	70,403	70,146	54,439	51,615	5,895	20,384	67,169	44,628
June	22,517	69,408	71,597	51,050	51,115	5,318	23,984	63,902	38,756
July	25,346	71,065	71,515	49,937	52,073	4,258	27,727	63,717	35,429
Aug.	30,674	73,211	72,112	58,427	49,700	4,619	30,165	64,491	
Sept.	35,504	72,175	70,977	54,523	44,011	5,453	35,077	68,236	
Oct.	41,743	69,229	68,536	58,891	37,523	5,086	42,138	69,569	
Nov.	45,550	70,786	68,548	60,074	33,593	3,869	44,057	67,050	
Dec.	50,652	69,792	72,299	60,246	29,488	5,697	48,918	63,793	

At End of Recent Weeks

	First Saturday	Second Saturday	Third Saturday	Fourth Saturday	Fifth Saturday
1927					
November	69,660	69,501	69,850	67,318	——
December	65,869	66,011	64,761	63,397	63,207
1928					
January	64,360	65,524	65,450	66,285	——
February	65,909	64,945	63,769	63,103	——
March	61,978	61,920	61,033	59,644	58,197
April	58,732	58,945	56,819	53,360	——
May	52,015	50,837	48,705	44,628	——
June	43,716	42,683	41,185	40,083	38,611
July	36,915	35,925	35,238	35,445	——
August	34,294	33,649	32,591	32,815	——
September	31,933	31,477	32,110	31,884	31,462
October	29,525	27,370			

Rubber in Singapore and Penang

(Stocks held by Dealers—Quantities in Long Tons)

End of	1926	1927	1928	End of	1926	1927	1928
Jan.	16,726	25,440	25,868	July	23,101	22,558	18,663
Feb.	13,653	26,766	22,867	Aug.	23,362	25,764	18,971
Mar.	18,389	27,844	20,538	Sept.	25,997	25,178	14,898
Apr.	16,328	24,543	16,946	Oct.	26,614	25,790	
May	16,967	25,133	17,437	Nov.	25,486	28,369	
June	19,416	21,898	18,207	Dec.	26,443	25,798	

Rims Inspected and Passed in U. S.

(Tire and Rim Association Reports)

	Total	Per Cent Balloons		Total	Per Cent Balloons
1922	16,297,735	0.0	1925	26,001,664	66.8
1923	23,140,620	0.6	1926	24,199,524	78.8
1924	21,863,311	19.7	1927	19,700,003	79.1
1928			1928		
January	1,811,534	87.8	July	2,209,692	85.9
February	1,806,437	86.5	August	2,318,898	80.2
March	2,420,084	86.4	September	2,315,604	76.9
April	2,316,324	88.4	October	——	—
May	2,185,592	84.0	November	——	—
June	2,429,453	83.1	December	——	—

U. S. Consumption of Gasoline

(In Barrels of 42 Gallons)

MONTHS	1924	1925	1926	1927	1928
January	11,918,000	14,386,000	17,582,000	17,888,000	20,939,000
February	9,626,000	13,210,000	15,814,000	18,240,000	21,136,000
March	10,961,000	14,890,000	19,302,000	22,464,000	24,041,000
April	14,583,000	19,013,000	20,848,000	23,371,000	25,712,000
May	15,889,000	20,459,000	24,213,000	26,579,000	27,355,000
June	16,421,000	20,724,000	23,803,000	27,799,000	29,022,000
July	18,610,000	22,879,000	24,752,000	29,784,000	30,960,000
August	19,825,000	22,323,000	26,912,000	29,779,000	33,148,000
September	16,871,000	20,177,000	22,929,000	28,409,000	
October	18,029,000	19,826,000	23,973,000	25,497,000	
November	16,607,000	18,024,000	20,618,000	24,400,000	
December	15,663,000	17,954,000	21,419,000	23,718,000	
TOTAL	185,003,000	223,865,000	262,165,000	297,928,000	

U. S. Tire and Tube Statistics

(All Figures Represent Thousands)

AUTOMOBILE CASINGS

Figures for Recent Years

	1922	1923	1924	1925	1926	1927
Production	40,932	45,259	51,633	60,845	61,237	64,439
Shipments	39,987	45,204	50,120	59,262	59,002	64,059
Inventory[2]	6,132	5,772	7,427	8,142	10,456	10,264

Figures for Recent Months

	PRODUCTION			SHIPMENTS			INVENTORY		
	1926	1927	1928	1926	1927	1928	1926	1927	1928
Jan.	4,587	4,965	5,491	2,974	4,932	5,394	9,947	10,432	9,949
Feb.	4,865	5,095	6,363	3,436	4,458	5,031	11,164	11,075	11,721
Mar.	5,456	6,276	6,819	4,561	5,701	5,731	12,004	11,583	12,389
Apr.	5,846	6,299	6,178	4,980	5,701	5,812	12,461	12,122	12,717
May	5,023	6,151	6,759	5,211	5,657	6,457	12,343	12,462	13,024
June	5,422	6,202	6,692	5,724	6,253	7,117	11,968	12,462	12,162
July	4,950	5,087	6,498	6,337	5,973	7,895	10,592	11,326	11,157
Aug.	5,872	5,752	7,469	6,744	6,393	8,403	9,732	10,721	10,034
Sept.	5,706	4,822		6,040	5,717		9,318	9,722	
Oct.	5,103	4,773		4,544	4,799		9,917	9,665	
Nov.	4,324	4,502		3,733	4,306		10,297	10,136	
Dec.	4,683	4,497		4,718	4,165		10,456	10,264	

AUTOMOBILE INNER TUBES

Figures for Recent Years

	1922	1923	1924	1925	1926	1927
Production	50,850	60,116	70,706	82,614	76,618	70,823
Shipments	49,673	59,072	68,016	81,004	71,591	72,896
Inventory[2]	7,643	8,425	11,052	11,313	16,200	13,692

Figures for Recent Months

	PRODUCTION			SHIPMENTS			INVENTORY		
	1926	1927	1928	1926	1927	1928	1926	1927	1928
Jan.	6,809	5,337	5,441	3,723	6,016	6,072	14,361	15,585	12,982
Feb.	6,825	5,658	6,895	3,736	5,120	5,431	17,090	16,075	14,650
Mar.	7,030	7,184	6,231	4,987	6,157	5,731	19,131	17,096	15,573
Apr.	6,554	7,373	6,661	5,051	6,359	5,702	20,674	17,801	16,638
May	6,149	6,737	7,168	6,304	6,140	6,300	21,141	18,389	17,702
June	6,171	6,306	6,953	6,898	6,832	7,186	20,243	17,858	17,159
July	5,729	5,284	6,674	8,569	7,070	8,729	17,267	16,004	14,974
Aug.	7,424	6,480	8,343	9,579	7,983	9,350	15,462	14,664	13,931
Sept.	7,590	5,651		7,762	6,758		15,312	13,511	
Oct.	6,208	5,065		5,474	5,024		15,929	13,539	
Nov.	4,852	4,775		4,045	4,723		16,604	13,585	
Dec.	5,277	4,969		5,463	4,712		16,200	13,692	

(1) Rubber Association of America figures, raised to 100%. The Association estimates its figures to be 75% representative or complete when issued and that basis has been accepted when preparing the statistics in this table.

(2) Held by manufacturers at end of period indicated.

Automobile Production

	United States			Canada			
	Total	Passenger Cars	Trucks	Total	Passenger Cars	Trucks	Grand Total
1921	1,595,304	1,452,902	142,402	66,246	61,098	5,148	1,661,550
1922	2,547,208	2,302,923	244,285	102,053	94,904	7,149	2,649,261
1923	4,020,255	3,631,728	388,527	146,438	129,228	17,210	4,166,693
1924	3,600,918	3,203,049	397,869	135,246	117,765	17,481	3,736,164
1925	4,265,704	3,760,459	505,245	161,389	139,311	22,078	4,427,093
1926	4,298,799	3,808,753	490,046	205,092	164,483	40,609	4,503,891
1927							
Jan.	238,926	199,650	39,276	15,376	11,745	3,631	254,302
Feb.	304,758	264,171	40,587	18,655	14,826	3,829	323,413
March	394,430	345,911	48,519	23,250	19,723	3,527	417,680
April	404,743	357,009	47,734	24,611	20,890	3,721	429,354
May	404,099	357,148	46,951	25,708	21,991	3,717	429,807
June	321,959	278,728	43,231	19,208	16,470	2,738	341,167
July	268,474	236,866	31,608	10,987	8,719	2,268	279,461
Aug.	308,807	274,378	34,429	12,526	10,139	2,387	321,333
Sept.	260,420	226,440	33,980	11,262	8,681	2,581	271,682
Oct.	219,712	183,041	36,671	7,791	6,236	1,555	227,503
Nov.	134,381	109,742	24,639	6,617	5,173	1,444	140,998
Dec.	133,178	105,784	27,394	3,435	2,277	1,158	136,613
TOTAL	3,393,887	2,938,868	453,019	179,426	146,870	32,556	3,573,313
1928							
Jan.	225,039	199,032	26,007	8,463	6,705	1,758	282,502
Feb.	323,368	290,830	32,358	12,504	10,315	2,189	335,872
March	412,825	371,408	41,417	9,724	7,478	2,246	422,549
April	409,948	364,877	45,071	24,240	20,546	3,694	434,188
May	425,990	375,798	50,192	33,942	29,764	4,178	459,932
June	396,967	356,439	40,528	28,399	25,341	3,058	425,366
July	390,445	237,933	52,512	25,226	20,122	5,104	415,671
Aug.	458,429	400,689	57,740	31,245	24,274	6,971	489,674
Sept.	413,722	358,872	54,850	21,193	16,572	4,621	434,915
Oct.							
Nov.							
Dec.							

Exports of Crude Rubber from Principal Producing Countries

(Long Tons)

	BRITISH MALAYA[1]								DUTCH EAST INDIES[2]						
	Gross Exports	Imports	Gross Exports Minus Imports	Ceylon[3]	India & Burma[4]	Sarawak[4]	British North Borneo[4]	Siam[4]	Java & Madura	Sumatra E. Coast	Other D.E.I.	Indo-China[5]	Amazon Valley	All Other[6]	World Total[7]
1923	252,016	70,432	181,584	39,971	6,416	5,705	4,237	1,718	32,930	46,344	57,822	5,067	16,765	7,856	406,955
1924	259,706	108,524	151,182	39,997	7,697	6,699	4,621	2,962	42,446	54,497	80,347	6,688	23,165	9,065	429,366
1925	316,825	158,022	158,803	49,566	10,082	5,424	5,377	5,377	46,757	65,499	120,626	7,881	25,298	13,797	517,523
1926	391,328	151,243	240,085	58,962	9,874	9,155	6,079	4,027	52,186	71,413	121,231	8,203	24,298	16,017	621,530
1927	371,322	182,845	188,477	55,356	11,321	10,923	6,582	5,472	55,297	77,815	142,171	8,645	28,782	16,633	606,474
1926:															
Apr.	**23,727**	**10,565**	**13,162**	**3,766**	**590**	**679**	**374**	**298**	**4,226**	**4,598**	**6,285**	**410**	**2,318**	**1,529**	**38,280**
May	**31,231**	**10,604**	**20,627**	**3,944**	**691**	**927**	**410**	**279**	**4,440**	**5,358**	**8,737**	**502**	**1,353**	**1,464**	**48,782**
June	**30,624**	**11,764**	**18,860**	**4,208**	**452**	**779**	**512**	**275**	**4,444**	**6,125**	**10,614**	**549**	**1,213**	**1,279**	**49,310**
July	28,824	15,280	13,544	4,422	938	911	498	439	4,618	5,612	13,112	1,521	1,565	1,148	48,328
Aug.	34,625	13,595	21,030	5,666	521	890	476	316	4,132	5,699	10,390	378	1,888	1,097	52,483
Sept.	35,913	13,972	21,941	6,015	651	888	689	457	4,065	6,568	11,391	681	2,156	822	56,324
Oct.	39,367	15,203	24,164	5,672	634	805	473	385	4,058	6,998	11,491	661	1,904	1,023	58,268
Nov.	34,302	12,201	22,101	4,228	1,110	685	547	285	3,988	5,816	9,422	718	1,911	1,259	52,070
Dec.	36,811	14,716	22,095	6,498	1,176	895	617	338	5,054	7,117	12,786	790	3,821	714	61,901
1927:															
Jan.	34,946	14,995	19,951	6,697	921	959	585	304	4,187	6,706	10,690	941	3,482	981	56,404
Feb.	27,528	11,697	15,831	3,571	1,469	552	445	360	4,078	6,526	10,535	675	2,104	1,098	47,244
Mar.	41,346	17,464	23,882	7,142	1,124	997	639	432	5,657	7,004	12,905	733	3,178	1,791	65,484
Apr.	29,041	13,069	15,972	3,349	723	984	452	526	4,666	5,531	10,197	557	2,451	1,520	46,928
May	31,398	15,491	15,902	3,124	760	786	415	348	5,430	5,529	13,410	586	2,460	1,207	49,957
June	32,607	14,706	17,901	3,348	856	1,100	539	409	4,818	5,518	9,109	772	889	1,731	46,990
July	23,947	12,697	11,250	4,018	827	859	544	333	4,771	6,142	11,566	519	1,757	1,113	43,699
Aug.	30,371	17,105	13,266	5,357	688	1,133	623	546	4,355	6,682	12,440	716	1,928	969	48,703
Sept.	29,835	12,095	17,740	4,911	479	645	566	498	3,635	5,957	9,853	497	2,072	1,213	48,066
Oct.	29,846	15,801	14,045	5,245	802	721	591	542	3,810	7,755	13,633	775	2,752	939	51,520
Nov.	28,277	19,860	8,417	4,464	1,277	1,241	591	600	4,127	6,587	14,395	683	2,369	1,627	46,378
Dec.	32,185	17,865	14,320	4,130	1,395	946	592	664	5,763	7,878	13,438	1,191	3,340	1,444	55,101
1928:															
Jan.	27,731	16,618	11,113	4,352	1,605	842	500*	525	4,851	7,988	11,360	720	2,273	1,025	47,154
Feb.	28,813	12,911	15,902	4,353	1,081	667	500*	536	4,052	6,757	8,635	723	1,612	1,276	46,094*
Mar.	27,813	10,508	17,305	3,460	775	645	500*	269	3,999	5,826	9,690	613	2,750	1,211	47,043*
Apr.	20,029	9,335	10,694	3,460	789	630	500*	258	3,993	5,040	5,538	518	1,014	1,323	33,757
May	26,403	10,350	16,053	3,125	654	842	500*	241	4,943	5,355	10,382	619	2,062	1,200*	45,976*
June	22,930	16,168	6,762	3,125	963	926	500*	451	5,419	5,863	13,623	902	1,399	1,200*	41,133*
July	30,405	13,383	17,022	4,798	1,043	905	500*	366	5,602	7,566	11,424	744	1,264	1,200*	52,434*
Aug.	35,593	15,114	20,479	5,580	398	1,227	500*	544	5,668	7,438	11,798	779	1,732	1,200*	57,343*
Sept.	29,700	11,239	18,461										1,614		

(1) Malayan net exports cannot be taken as production, since imported rubber is largely wet native rubber, which is reduced about one-third in weight by remilling; rubber exported as latex is not included which on a basis of 3½ pounds per gallon amounted to 115 tons in 1923, 1,117 in 1924, 3,618 in 1925, 3,263 in 1926, and 2,439 in 1927. (2) Ceylon Chamber of Commerce statistics until 1926; rubber exported as latex is not included—such shipments were equivalent to 18 tons in 1923, 93 tons 1924, 6 tons 1925, 20 tons in 1926, and about ½ ton in 1927. (3) Official statistics. (4) Imports into Singapore and Penang. (5) Exports from "Other D.E.I" are chiefly wet native rubber, which is reduced about one-third in weight by remilling; rubber exported as latex is not included which on a basis of 3½ pounds per gallon amounted to 2,342 tons in 1923, 1,008 tons 1924, 2,239 tons 1925, 44 tons in 1926, and 84 tons in 1927. (6) Calculated from official import statistics of principal consuming countries, viz., United States, United Kingdom, France, Germany, Belgium and Netherlands. This figure includes guayule rubber. (7) This total includes the third column for British Malaya, "Gross Exports minus Imports," and all the figures shown for the other territories. *Figure is provisional; final figure will be shown immediately it becomes available.

Net Imports of Crude Rubber into Principal Manufacturing Countries

(Long Tons)

	United States*	United Kingdom	France (h)	Germany	Canada (ac)	Japan (ac)	Italy	Russia (ce)	Australia (ed)	Belgium (d)	Netherlands	Scandinavia (abcdf)	Spain (g)	Czechoslovakia (abcd)	World Total
1919	236,977	42,671	17,685	5,584	6,395	9,753	9,894	75	1,002	3,995	2,771	3,149	2,418	9	342,378
1920	248,762	56,844	13,885	11,890	11,746	5,297	6,123	62	1,815	3,840	5,510	2,292	2,008	567	370,641
1921	179,678	42,087	15,135	21,920	8,124	21,713	3,903	165	1,014	1,705	1,022	1,279	2,245	569	300,562
1922	296,267	11,724	24,352	27,546	9,207	15,934	6,430	2,493	2,643	172	-3,807	1,778	589	567	395,886
1923	300,372	12,700	27,392	18,519	13,277	15,372	8,489	2,986	1,649	2,184	792	2,528	630	1,128	408,018
1924	317,747	-11,550	30,446	22,727	14,299	19,571	8,764	2,346	3,124	2,688	-807	3,178	944	1,370	414,847
1925	381,815	4,061	32,956	33,937	19,683	11,117	11,412	7,088	4,757	2,930	875	3,149	1,155	1,558	516,493
1926	395,667	84,865	34,240	22,775	20,229	18,125	9,809	6,529	9,021	2,498	2,670	4,046	1,299	1,870	613,643
1926:															
April	**33,416**	**8,275**	**4,121**	**1,781**	**1,615**	**1,868**	**865**	**402**	**505**	**71**	**93**	**335**	**130**	**193**	**53,670**
May	**28,705**	**6,773**	**2,519**	**1,848**	**1,239**	**1,010**	**705**	**200**	**468**	**186**	**241**	**225**	**60**	**192**	**44,371**
June	**23,795**	**5,894**	**2,196**	**1,655**	**1,188**	**1,465**	**1,070**	**983**	**686**	**269**	**215**	**303**	**123**	**103**	**39,895**
July	**34,266**	**6,768**	**2,352**	**2,202**	**1,552**	**1,447**	**800**	**132**	**702**	**295**	**480**	**292**	**121**	**115**	**51,524**
August	**26,081**	**7,327**	**2,457**	**2,110**	**1,888**	**1,284**	**796**	**655**	**1,275**	**303**	**594**	**336**	**90**	**151**	**45,847**
September	**35,675**	**8,843**	**1,774**	**2,029**	**1,355**	**1,922**	**819**	**472**	**1,241**	**283**	**429**	**317**	**91**	**138**	**55,388**
October	**28,110**	**8,082**	**3,376**	**2,423**	**1,865**	**2,396**	**645**	**585**	**1,004**	**301**	**2**	**360**	**100**	**121**	**49,370**
November	**37,673**	**9,247**	**2,719**	**3,007**	**1,548**	**3,380**	**832**	**568**	**916**	**194**	**-18**	**358**	**90**	**181**	**60,695**
December	**35,850**	**4,749**	**2,890**	**2,562**	**1,847**	**856**	**439**	**725**	**777**	**248**	**156**	**443**	**151**	**306**	**51,999**
1927:															
January	**41,815**	**10,192**	**3,284**	**2,481**	**1,936**	**1,227**	**672**	**803**	**929**	**296**	**192**	**316**	**139**	**100**	**64,382**
February	**25,886**	**7,692**	**3,263**	**3,103**	**2,620**	**1,902**	**601**	**907**	**460**	**502**	**152**	**336**	**146**	**210**	**47,780**
March	**32,752**	**9,049**	**2,050**	**3,475**	**3,760**	**1,578**	**852**	**784**	**780**	**454**	**86**	**385**	**137**	**127**	**56,269**
April	**44,627**	**7,875**	**2,310**	**2,393**	**1,509**	**2,181**	**781**	**1,972**	**762**	**448**	**58**	**230**	**177**	**218**	**65,541**
May	**33,736**	**2,896**	**2,006**	**3,380**	**2,519**	**1,084**	**918**	**887**	**694**	**626**	**-57**	**335**	**155**	**223**	**49,402**
June	**31,270**	**2,282**	**2,387**	**3,632**	**2,086**	**798**	**942**	**1,506**	**557**	**583**	**-17**	**243**	**164**	**183**	**46,616**
July	**35,719**	**1,116**	**2,384**	**2,899**	**2,104**	**1,505**	**1,007**	**415**	**900**	**429**	**66**	**227**	**177**	**236**	**49,184**
August	**31,001**	**3,463**	**2,795**	**3,119**	**2,013**	**1,970**	**1,274**	**386**	**650**	**604**	**-63**	**312**	**138**	**123**	**47,785**
September	**29,801**	**7,800**	**1,956**	**2,891**	**1,850**	**2,025**	**684**	**518**	**772**	**552**	**-33**	**451**	**155**	**272**	**49,694**
October	**27,671**	**5,888**	**3,479**	**4,202**	**1,790**	**1,966**	**1,021**	**1,075**	**908**	**465**	**156**	**401**	**153**	**363**	**49,538**
November	**36,123**	**1,687**	**3,661**	**4,209**	**1,916**	**1,575**	**1,167**	**1,312**	**836**	**749**	**298**	**474**	**246**	**317**	**54,570**
December	**28,082**	**309**	**4,696**	**3,108**	**2,302**	**2,710**	**1,462**	**1,453**	**1,242**	**784**	**-202**	**514**	**268**	**300**	**47,028**
	398,483	**60,249**	**34,271**	**38,892**	**26,405**	**20,521**	**11,381**	**12,018**	**9,490**	**6,492**	**636**	**4,224**	**2,055**	**2,672**	**627,789**
1928:															
Jan.	**37,120**	**1,921**	**1,764**	**2,485**	**2,290**	**1,361**	**760**	**995**	**802**	**589**	**52**	**261**	**335**	**376**	**51,111**
Feb.	**30,926**	**3,143**	**2,526**	**2,984**	**2,553**	**1,258**	**437**	**159**	**616**	**599**	**98**	**307**	**296**	**297**	**46,199**
Mar.	**36,970**	**8,179**	**1,902**	**3,521**	**2,989**	**1,707**	**763**	**1,468**	**918**	**816**	**95**	**351**	**497**	**398**	**55,574**
April	35,686	—2,280	2,204	2,719	1,938	2,353	1,115	926	832	575	280	339	304	159	47,150
May	28,659	—5,323	3,210	2,944	2,180	2,306	1,095	744	635	746	209	485	220	213	38,348
June	25,143	—3,031	4,550	2,968	2,632	2,119	984	710	348	743	133	346	251	182	38,078
July	28,170	—1,374	2,652	3,387	2,692	2,042	1,599	660	591	895	395		175	384	
Aug.	28,497	48		2,744	2,447				707	519	316				

a—Including gutta percha. b—Including balata. c—Re-exports not deducted in monthly statistics. d—Including some scrap and reclaimed rubber. e—German, United Kingdom, and United States exports to Russia. f—Including Norway, Sweden, Denmark and Finland. g—United Kingdom and French exports to Spain except in years prior to 1925. h—French imports have been reduced 12 per cent in order to eliminate imports of gutta percha and to reduce to basis of net weight. *United States imports of guayule are not included in this compilation; such imports amounted to 4,305 tons in 1926 and to 5,019 tons in 1927.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912, of THE RUBBER AGE, published semi-monthly at New Brunswick, N. J., for October 1, 1928.

State of New York } ss
County of New York }

Before me, a notary public in and for the State and county aforesaid, personally appeared P. L. Palmerton, who having been duly sworn according to law, deposes and says that he is the Editor of THE RUBBER AGE and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 411, Postal Laws and Regulations, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:

Publisher, Palmerton Publishing Company, Inc., 250 W. 57th St., New York City; Editor, P. L. Palmerton, 250 W. 57th St., New York City; Managing Editor, None; Business Manager, Peter P. Pinto, 250 W. 57th St., New York City.

2. That the owner is, (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given).

Palmerton Publishing Company, Inc., 250 W. 57th St., New York City; P. L. Palmerton, 250 W. 57th St., New York City; Aviation Publishing Corp., 250 W. 57th St., New York City.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are:

None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholders or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contains statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stocks, bonds, or other securities than as so stated by him.

P. L. Palmerton, Editor

Sworn to and subscribed before me this 29th day of September, 1928

[seal] HANNAH GOLDENSON, Notary Public.

(My commission expires March 30, 1930.)

United States Imports of Guayule Rubber and Related Gums

(All quantities in Long Tons)

	Guayule		Balata		Jelutong		Gutta Percha	
	Tons	Dollars	Tons	Dollars	Tons	Dollars	Tons	Dollars
1919	1,430	760,690	727	937,038	8,332	2,213,964	2,900	1,068,698
1920	758	345,985	1,064	1,260,043	5,672	2,068,501	3,183	1,520,309
1921	58	26,945	814	1,077,859	1,745	351,893	985	333,564
1922	127	57,040	812	978,765	2,335	403,812	818	281,012
1923	1,155	542,227	700	898,524	4,565	853,308	912	375,167
1924	1,356	536,392	464	568,456	6,165	1,237,100	1,408	463,610
1925	3,781	1,803,448	517	574,750	6,749	1,642,531	1,603	629,284
1926	4,805	2,562,096	354	327,213	7,263	3,127,757	1,445	661,156
1927	5,018	2,674,957	582	447,246	7,785	2,448,657	1,494	728,172
1928:								
Jan.	432	242,339	27	24,218	588	183,705	150	86,702
Feb.	489	281,295	33	32,165	403	142,621	312	215,085
Mar.	575	365,927	32	26,460	829	388,616	115	57,833
Apr.	512	312,131	47	32,924	592	174,970	68	27,627
May	452	283,414	—	—	679	226,064	100	42,762
June	424	220,081	9	6,799	293	91,152	28	12,374
July	191	100,342	123	46,747	373	113,295	81	27,344
Aug.	—	—	399	165,460	451	126,962	147	60,738

Reclaimed Rubber in the United States

(All Quantities in Long Tons—100% Basis)

Year	Production	Consumption	% to Crude	Stocks*
1919	81,366	73,535	36.3	.....
1920	86,395	75,297	38.4	.....
1921	36,725	41,351	24.1	.....
1922	57,834	54,458	19.3	.....
1923	74,766	69,534	22.7	.....
1927:				
Jan.	16,526	12,374	39.3	25,903
Feb.	15,860	14,424	47.8	27,291
Mar.	16,788	13,528	37.4	27,124
Apr.	14,483	16,677	46.5	25,712
May	16,159	15,754	46.1	26,419
June	16,652	15,547	46.0	25,811
1928:				
Jan.	14,862	18,134	52.7	21,941
Feb.	15,291	16,808	49.9	20,848
Mar.	17,039	18,619	52.2	19,558
Apr.	15,393	17,355	52.9	19,283
May	18,945	18,201	48.8	18,187
June	18,781	16,328	43.4	18,70-

Year	Production	Consumption	% to Crude	Stocks*
1924	80,079	76,072	22.4	.....
1925	132,930	137,105	35.6	13,203
1926	180,582	164,500	45.9	23,218
1927	189,144	178,471	47.6	24,980
July	15,488	13,842	47.4	26,599
Aug.	15,109	15,836	47.3	25,157
Sept.	14,392	14,790	54.3	23,429
Oct.	16,127	17,292	64.5	22,176
Nov.	15,477	14,876	55.5	21,728
Dec.	16,083	13,431	52.7	24,980
July	17,278	17,173	45.9	17,305
Aug.	19,049	15,532	36.2	15,881
Sept.	18,693	16,022	40.2	17,991
Oct.				
Nov.				
Dec.				

*Stocks on hand at the end of month or year. Exports of reclaimed rubber, not shown in this table, amounted to 8,540 tons in 1927.

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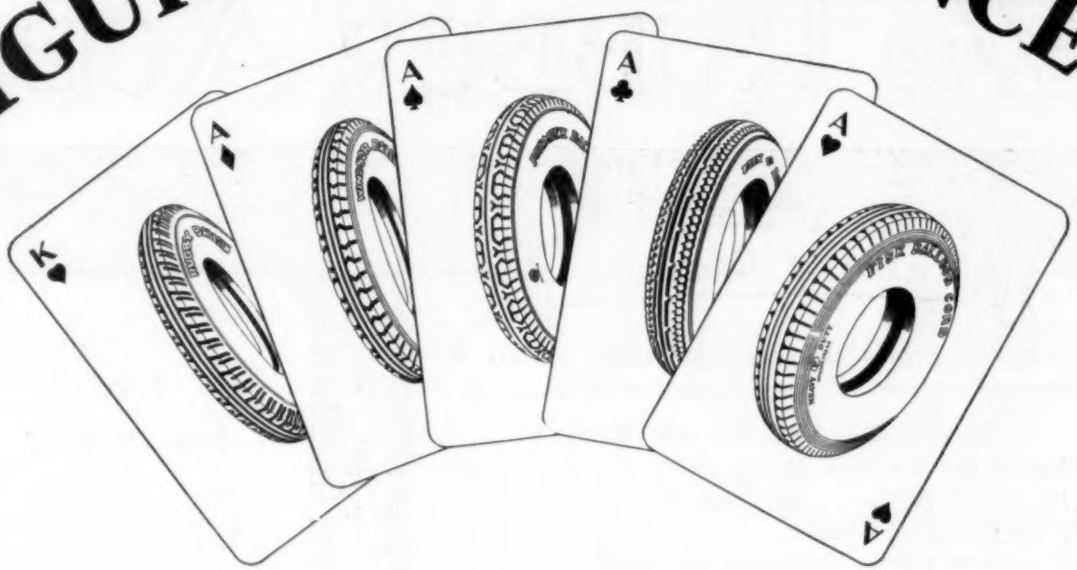

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